

THE
PORTRAIT
OF
OLD AGE.

Wherein is contained a
SACRED ANATOMY
BOTH OF
SOUL *and* BODY,
AND

A perfect Account of the Infirmities of
AGE incident to them Both.

BEING
A Paraphrase upon the Six former Verses
of the XIIth Chapter of *Ecclesiastes*.

By JOHN SMITH, M.D.
Of the COLLEGE of PHYSICIANS.

The THIRD EDITION Corrected.

*Nam pernicietas deserit, Confitus sum
Senectute, onustum gero Corpus, vires
Reliquere; ut Aetas mala, merx est ergo.* Plau'us.

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THE
PORTRAIT
OF
OLD AGE

Written in English
SACRED ANATOMY
SOUL AND BODY



BY JOHN SMITH

THE THIRD EDITION

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TO THE
READER.

*W*Hosoever thou art, into whose hands this paraphrase may fall, know that the author of it is not near enough any Nobleman to put it into his hands; nor hath he face enough (as is the mode of this daring age) to call at a distance; but could he do both, yet know also, he would do neither; for he desireth not, that any thing, either of others, or his own, should be patronized beyond its own native worth; and is himself as willing, as any touchy-headed Decriers of anatomy and anatomists, of all art and artists, that all the shame that is due to the ill managing of this good Subject, should return upon his own pate; and such is his allegiance to his king, that if he can but keep off their foul fingers from him, to which they are apt enough, he cares not how heavy they fall upon himself: And on the other hand, if there be any thing herein contained, of true value, it will but shine the brighter for the rubs and petulant endeavours of all conductitious detractors; who, being thrust out of some

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mercenary employments, in a few months time, by their mother wit, (which for want of good neighbours they greatly cry up themselves, and instead of bad neighbours do closely insinuate as if all others wanted it) can get knowledge enough in physick to condemn and vilify, and in two words (viz. Calenists and fools) abundantly confute all those worthy persons, who from childhood to gray-hairs, have been studying, endeavouring, and praying; have been exercising both their minds and their bodies; their heads, their hearts, and their hands; that they may become expert seconds unto nature, and meet combatants for all those dreadful enemies that the sins of man have stirred up against the peace of his own body. But beside this scum of ill conditioned Zoili, there are others also nibbling at the beel of learned physicians; whose wounds, though seemingly slightly inflicted, yet are far worse than the former, and that not only because they are persons of credit and knowledge, but because they pretend friendship, and kiss while they do the mischief. These are those, whom birth, education, and industry, have so securely seated in honour, that nothing can possibly dethrone them, but that which cast the angels from heaven, and man out of paradise; that abominable Quasiwois, which for ever did, and for ever will set God in a resistance; and the best of their friends cannot
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but in time mind them, that those smart reflections without cause, both in private and publick, not only upon particular persons, but upon whole societies of men, half of whom they know not so much as by hear-say) seem to have a tincture of that virulent poison, which as easily and as quickly proceeds out of knowledge, as the worm did out of Jonah's gourd; and will (if not speedily prevented) soon wither into nothing all that content under which they have for a season gladly shadowed themselves. And here I am afresh put in mind of the story of Herod, who persecuted the world's worthies, and, because he saw it pleased the people, he proceeded farther also: And thus persecuting his rage and ambition, in royal apparel, and with popular oratory, the angel of the Lord smote him, because he gave not God the glory, and he was eaten of worms. That main and best end, which secureth all men in their undertakings, was it which first moved the author hereof to study sacred philosophy, and to apply himself to the interpretation of such scriptures, as border upon that faculty unto which he hath betook himself ever since he hath had the judgment of election wherein he might be most serviceable in his generation. This was the good seed: but falling into a barren and ill manured soil, hath, for the present, produced no better a blade, than what you here see; which however, if it please the
Lord

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the Lord to prosper, may bring forth as useful fruit as those that seem more fair and flourishing. Herein old men may see their own natural faces, as in a glass; and young men may foresee, what (if they live) will certainly betide them in their latter end. Systems and compleat treatises (though out of fashion, and consequently neglected in this mimical age) are of better use, than fragments of mechanism, and independent pieces of experimental knowledge, which by most men at present are had in greatest honour and reputation; but, in this respect of honour, the groundwork of what is here discoursed upon far surpasseth them all; the author thereof being the wisest, and the greatest earthly potentate throughout all generations. The portraiture that is here drawn, is done by the hands of no meaner a person than king Solomon, and may justly be called, *ἐκὼν βασιλική*; that superabundant wisdom in natural things, which it pleased God miraculously to enrich him withal, beyond all that were before him, or since to this very day, being no where more graphically delineated, than in this description of age; whereby it plainly appears that Solomon was not like that forward traveller, who was well skilled in foreign countries, and, in the mean time, knew little or nothing of his own native Land. For as he very well knew all vegetables, from the cedar

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cedar in Libanon, to the byssop that springeth out of the wall, and those creatures also of an higher rank, namely, all beasts, fowls, creeping things, and fishes: So neither was he ignorant at home; but that wherein his greatest wisdom consisted, was, that he perfectly knew himself; and that intus et in cute; both in respect of the inward and the outward man: All the secret and mysterious powers of the mind were as naked and open before him, as the visible parts of the body are before a vulgar anatomist, and his $\psi\upsilon\chi\omicron\lambda\omicron\gamma\iota\alpha$ in this allegory contained, doth more fully and satisfactorily declare and distinguish them, than whatsoever hitherto hath been endeavoured to that purpose, by the best of moralists; and as for the parts of the body, those apposite symbols which are here all along the description brought to express them, do abundantly declare his most exquisite and exact knowledge in them all. Not only such a knowledge, as was then attained in the world, or as should in after-ages be attained by any; but such an one, as was attainable, or as the human nature was able to comprehend; and whatsoever certain inventions in anatomy have crowned the ingenious inquirers of succeeding time, lie couched in some one or other expression of this allegory. Among many other things, it is here clearly demonstrated, that Solomon perfectly knew, and as plainly as his figurative method would give leave,

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described the circular motion of the blood; the best and most useful invention of this latter age. And as for the subject which is directly here intended, viz. the description of the infirmities of age, though it be compendiously handled by him, yet it is compleatly done in all things appertaining thereunto, both moral, natural, and divine. And indeed, what can the man say that comes after the king? The most knowing and ingenious persons in the best enlightned generations, can add no more hereunto, than they can unto their own stature: It only remains, that some such give us the full interpretation of what is here delivered, since it pleased the king to leave it to after ages, enveloped with a canopy of the same wisdom that indited it. And if this weak essay may excite any such, for the future lovingly to correct what is here amiss, and to supply what is here deficient; it will be a most acceptable work; but if for the present, courteous reader, it may be of any use to thee, as a man, as a scholar, as a philosopher, as a physician, as a christian, follow the intimation that is here given thee, and I will follow thee with a good wish, which I am sure shall be accomplished for thee, and for all those, that honestly labour in God's word and work; I mean,



I bid thee God speed.

J. S.

King SOLOMON'S Portraiture of OLD AGE.

Eccles. xii. 1, 2, 3, 4, 5, 6.

*Remember now thy Creator in the days of thy youth,
while the evil days come not, nor the years draw nigh,
when thou shalt say, I have no pleasure in them.*

*While the sun, or the light, or the moon, or the stars
be not darkened, nor the clouds return after the rain.*

*In the day when the keepers of the house shall tremble,
and the strong men shall bow themselves, and the
grinders cease because they are few, and those that
look out of the windows be darkened.*

*And the doors shall be shut in the streets, when the sound
of the grinding is low, and he shall rise up at the
voice of the bird, and all the daughters of musick shall
be brought low.*

*Also when they shall be afraid of that which is high;
and fears shall be in the way, and the almond-tree
shall flourish and the grasshopper shall be a burthen,
and desire shall fail, because man goeth to his long
home, and the mourners go about the streets.*

*Or ever the silver cord be loosed, or the golden bowl be
broken, or the pitcher be broken at the fountain, or
the wheel broken at the cistern.*

THE Oracles of God are given forth
that the men of God may be made
wise unto salvation, (2 Tim. iii. 15.)
and all those that through faith have themselves
exercised therein; shall, thro' grace, (the Spirit
of God moving upon the waters,) obtain that
most desired end; but this main happiness, is

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not the only, that may be acquired by searching the scripture; for there are many natural things, the knowledge whereof may be better gained in one line of them, than in whole volumes of confused naturalists: Wherefore he that in the true fear of God shall apply himself to them, may think not only to have eternal life, but by the way also to obtain the true knowledge of most things that appertain to this. *Seek first the Kingdom of God, and all other things shall be added unto thee, Mat. vi. 33.* Solomon sought after nothing but wisdom, but see what a gracious answer he received, *I have given thee a wise and an understanding heart, I have also given that which thou hast not asked, both riches and honour, and I will lengthen thy days, 1 Kings iii. 5—15.* Thus it pleaseth God to deal with those who are sincere, not only to give them their hearts desire, but to superadd somewhat they were not aware of, that may be beneficial to them in their course of life. Looking after the duty of man, which is compleatly set down in *ver. 13.* of this chapter, I find before I come there, an anatomical enumeration of the sad symptoms of extreme old age, and such an one as I dare be bold to say, is not elsewhere to be found. When the wisdom of the omniscient God, through his servant *Solomon* shall describe it, why should I search any further? Ænigmatical I confess it, and exceeding difficult; wherefore I have the more diligently applied myself to

to the interpretation of it. And so much the rather, because I find various senses put upon the words, and scarce any one hath, without interruption, carried the allegory clean through the whole six verses, as I judge it ought to be. And because a mistake in the parts of man, may cause a mistake in the literal interpretation, I (whose study it hath been to be more versed in those than usual interpreters) do take the liberty to endeavour explication, wherein, if beside my own satisfaction and content, I shall add any thing to others knowledge, I shall therein have a second reward.

I am not ignorant of all, nor do I despise any of those several interpretations both literal and mystical, that several learned and good men have been exercising themselves in. There are that expound all this allegory, or at least some part of it, to a state of wickedness, to a state of poverty, to a state of spiritual desertion, to a famine of bread, or of the Word of God, to the several dispersions and captivities of the *Jews*, to the destruction of both the temples, and of *Jerusalem*, to the obstinacy of the *Jews*, to the unprofitableness of the Gentiles under their ministry, to the apostasy of the latter times, to the end of the world, and to the day of judgment. I know God doth at sundry times, and in divers manners speak unto the world by his servants, *Heb. i. 1.* And knowing this first, that no prophecy of the scripture is of

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any private interpretation ; I know this from thence, that no private interpreter whatsoever is to bind up others to the measure of his own understanding. Now as I am against no other, so there is no other against me in this that I am about. All that can be said concerning it, is, that it is low, and mean, and ordinary, however (confest by all) it is true, genuine, and proper. And this may be said of it beyond all other whatsoever ; that it is the basis and foundation of all the rest. And every one of them receive their clarity of truth, from the analogy they bear to this primary interpretation ; that is, that these six verses are a true and proper description, of the natural, infirm, and decrepit age of mankind. That which the Latins call *ætas capularis* ; the age of him who is shortly to be taken unto death, or into the coffin, or upon the bier, or into the grave ; plainly the age of him, who is by course of nature just at his last, and must ere long necessarily yield to inevitable dissolution. There is in that language also another word (which way soever we take its etymology) that will excellently signify unto us the condition here delineated. And that is *filicernium* ; for whether we take it, *quasi filiceâ herniâ laborans* ; he that is troubled with hard ruptures, as very old men for the most part are, or *sili herbâ usurus*, he that will soon call into use such an herb as was then accustomed to funeral entertainments, or

filen-

silentibus brevi cernendus, he that will quickly be free among the dead; or lastly, *silices cernens*; he that by his age and infirmity is continually put in mind of his tomb; or rather (that which seems to be most proper) he that is bowed down with age, so that he cannot but behold the ground whereon he now stands, and under which he must ere long be laid. And this answereth exactly to the Greek word, γέρων, *παρὰ τὸ εἰς γῆν ὄραον*.

I shall not take upon me precisely to limit the bounds of this decrepit state, forasmuch as they are various, in respect of the dispositions of mens bodies, of their course of lives, and also of the places and ages in which they live. The lives of the Patriarchs before the flood were extended to almost a thousand years, *Gen. v. 27.* and yet we read not of those sad symptoms attending them, as attend us now at fourscore. About the time of the flood, God abbreviates the course of man's life, and seems precisely to set it at one hundred and twenty years, *Gen. lxiii.* I know very well most men would have this text to be understood as a threatening only to the present inhabitants of the old world, that it should be so many years before the flood swept them all away: But it seems to me (and not to me only *) rather to intend the cutting short of the life of man for the future. For it is clear by the context, that

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* *Josephus*, lib. 1. c. 7.

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the flood came upon the world within an hundred years after this denunciation ; which was made when *Noah* was five hundred years old, *Gen.* v. 32. And he was but six hundred years old when the flood of waters was upon the earth, *ch.* vii. 6. Now God doth seldom anticipate the execution of his judgments in wrath, but doth often prorogue it in mercy. It is as clear also, that many there were, even after the flood, whose lives were prolonged beyond this appointed period, but they found it very burthensome and grievous, and miseries with their age daily came upon them ; the first-born of death, about that time began to devour their strength, *Job* xviii. 13. and to take possession of them in the right of him that was to succeed. And they might then be said to die, in the same propriety of language, as *Adam* did in the day wherein he did eat the forbidden fruit ; but the Psalmist gives a more exact account of this thing, which may stand firm to this very day : *The days of our years are threescore years and ten, and if by reason of strength they be fourscore years, yet is their strength labour and sorrow, for it is soon cut off, and we flee away, Psal.* xc. 10. But as the universal fabrick, that God at first extracted out of nothing, draws nearer to its end, so doth every particular structure therein made, weaken and decay. *As the heaven and the earth wax old, so they that dwell therein shall die in like manner, Isa.* li. 6. And therefore it is not
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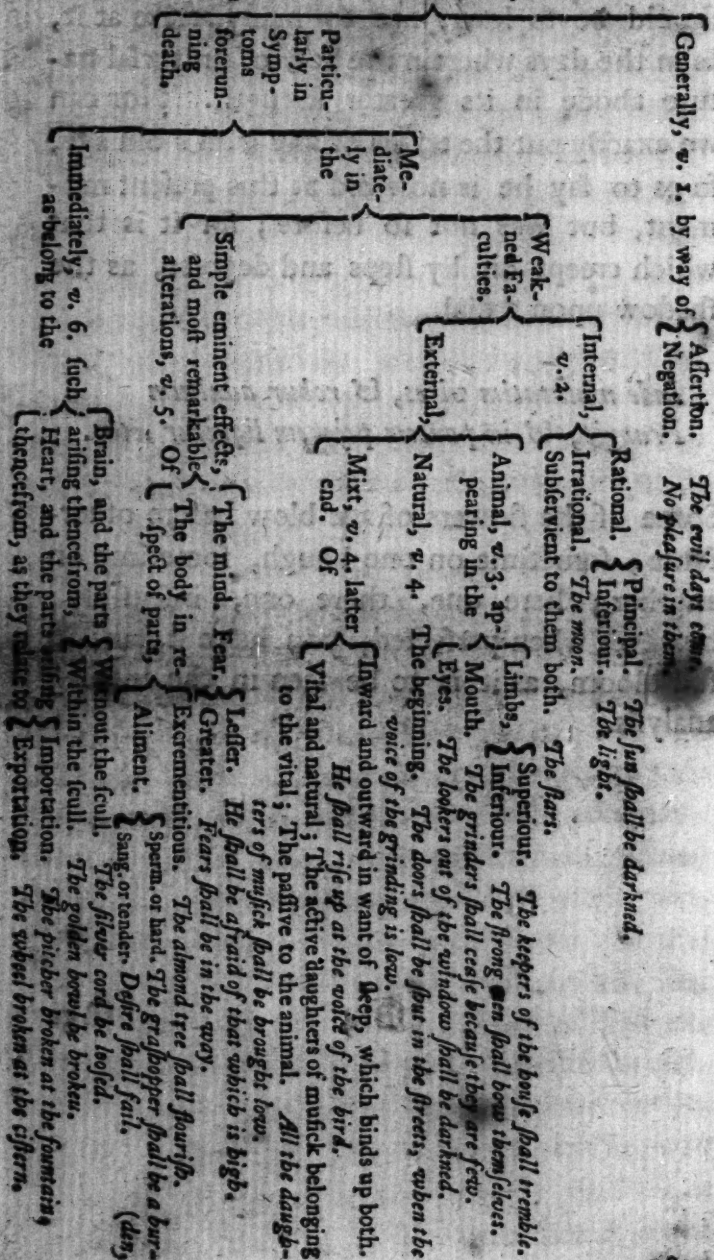
to be thought, that in these days man's age should be so long, nor so many arrive at it, as in the days wherein the bow of universal nature abode in its greater strength. Nor can we exactly put the terms of any man's old age, so as to say he is now old at this present moment, but was not so before; for it is that which creeps on by steps and degrees, as the shadow upon a dial.

*Inde minutatim vires, & robur adultum
Frangit, & in partem pejorem liquitur ætas.*

Some of the flowers of age blow before other-some; sometime on one bough, sometime on another; here one, there one, insensibly; however when perfected, you have it stand in full bloom, as it is to be seen in the ensuing analysis.

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Age is here described,



of OLD AGE.

Statutum est in coelis. It is a statute in heaven, for all men once to die, Heb. ix. 27. by virtue of which it is, that man must necessarily pass through all those various steps and passages, from the womb to the tomb, that are appointed unto him in that unalterable decree. As sure as man is born, so sure he must pass along, and unless it please the Lord sooner by a violent stroke to take him to himself, he must go from state to state, from age to age, and never stay, till he come to these evil days, and unpleasant years mentioned in the text. There was, it is probable, within the compass of the creation, that which had a natural property in it to preserve mortal, yea, sinful man without alteration. *Now lest he put forth his hand and take also of the tree of life, and eat, and live for ever; therefore the Lord God sent him forth from the garden of Eden to till the ground from whence he was taken,* Gen. iii. 22, 23. And when the creatures shall be delivered from the bondage under which they now groan, this *panacea* may again be restored to its primitive use: *Then shall the leaves of the tree of life be for the healing of the nations,* Rev. xxii. 2. but for the present, this is kept from us by a flaming sword, and therefore not to be attained unto. And I never knew any one touch but the foot of that mount, I mean, attempt any thing that is but analogous thereunto, but his work, if not himself, was destroyed thereby. And as our

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case now is, he that made us, he can save us ; he that made the sun, can cause it to stand still or go back at pleasure ; and he that made man, can uphold him without those changes, which otherwise unavoidably attend him. And in the days of wonder (when shoes and garments kept equal duration with mens flesh *Deut.* xxix. 5) so he did his servant *Moses*, concerning whom it is said, when he was one hundred and twenty years old, his eye was not dim, nor his natural force abated, *Deut.* xxxiv. 7. But this is his own prerogative, when he pleaseth ; in his ordinary providence, as he hath set certain bounds that a man cannot pass, so he hath set certain other that he must. *Man that is born of a woman cometh forth as a flower, he fleeth as a shadow*, *Job* xiv. 2, 5. he fleeth from infancy to childhood, from thence to youth, and from thence to strength, from thence to full age, from thence to declension, from thence to the state we are upon. And thus some interpret the second verse, *While the sun is not darkened*, (*i. e.*) the prime of youth be not spent, the light of that sun, is the full age ; the moon, is declining age ; and the stars, are the beginning of old age ; but this I judge not so primarily and properly the meaning of the place, as you will hear in this ensuing explanation.

VERSE

VERSE I.

*Remember now thy Creator in the days of thy youth,
while the evil days come not, nor the years draw
nigh, when thou shalt say, I have no pleasure in
them.*

THIS chapter begins with an exhortation to the most necessary duty of man, which is pressed upon him by a double inconvenience that will certainly come upon him, and for the future render him incapable to perform the same. The last and the greatest is that of death, described in the seventh verse. And this is the night wherein no man can work : The other is that of age, described in these six former verses. And this is the evening or latter part of the day, wherein it is very ill working, and nothing can be done, in comparison of what might have been done before ; let the neglect therefore of this duty for ever be annexed to a *μη γένοιτο*, God forbid that any one should defer the remembrance of his Creator until he be not able to remember at all, or put off the work of the highest concern, until he be altogether unfit to perform aright any of the meanest : But because it is my present design only to meddle with the allegory wherein is the description of Age, I shall not detain you in this most important entrance, but immediately fall upon my work. In this verse we have only a general description of
that

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that infirm condition, which is more particularly treated of in the following verses.

Age though it naturally creeps upon all men, whatsoever their constitutions and compositions are, yet it is itself a disease. *Senectus ipsa morbus*. And it doth certainly induce such a *cachexia*, or ill habit, that it renders us inserviceable to our ends, and doth as it were set open the gates, that all that troop of enemies may enter in, which follow here in their order.

Here are two expressions that intimate unto us the unavoidable approach of these decrepit years (*i. e.*) come and draw nigh; of which gemination, signifying the same thing, I may well say, as *Joseph* did upon the doubling of *Pharaoh's* dream, *Gen. xli. 32*; It is because the thing is established by God, and God will shortly bring it to pass. Whosoever we are, whatsoever we are doing, whithersoever we are going, they are still coming on. Be we male or female, be we Jew or Gentile, be we bond or free, be we princes or subjects, be we what can be imagined, they come, they come: While I write, while thou readeest, while we walk, while we sleep; while we abide at home, while we go abroad; while we eat, or drink, or sport; while we retire our selves, we pray or fast; while we neglect our selves, while we defend all we can against them, they draw nigh, they draw nigh. And that man who wrote a book, *

* *Gal. lib. de Marasmo. 2.*

de non senescendo, lived to his own disgrace, to see his own error confuted in himself.

Here are two words also to express the contention of this state so long as it shall be, (i.e.) *days* and *years*; both these words signify also the same thing in the general, viz. how long this state shall remain: And thus *Jacob* useth them both, in giving an account unto *Pharaoh* how long his life had continued: *The days of the years of my pilgrimage are one hundred and thirty years, few and evil have the days of the years of my life been, and have not attained unto the days of the years of the life of my fathers, in the days of their pilgrimage*, Gen. xlvii. 9. But in particular, they intimate unto us a diversity of their continuation to divers persons. Some men pass over this bad way, and remain but a very little while in it; others pass over it more slowly, and continue therein much longer. Some have but a few days of labour and sorrow, others have them prolonged out to years. As the Lord only knows what person in the world (for there are but few in these last ages) shall be brought to this state; so he only knows how long they shall remain in it. Whether this time shall be more or less, whether days or years shall determine it, is to us uncertain, but this is most certain concerning them both, that if they be at all, so long as they are, they shall be evil, they shall be unpleasant.

Evil days.

I here take the word *evil* in a good sense, that is, not for the evil of sin, but the evil of misery, the fruit of sin. I know there be them that would have this word, if not the whole allegory, understood of such days and years as wicked men, by their giving themselves up to follow their own hearts lust with greediness, do voluntarily bring upon themselves; but it seems to me to be otherwise, and that chiefly from these two reasons: 1. Because I find nothing in the allegory that is not com̄petible to every particular person that lives to the time of this state, both to the good and bad, both to the righteous and the wicked; weakneses, infirmities, diseases both of body and mind attend them all: *Isaac, Jacob, Eli, David*, as well as those who led never so contrary lives, must bear the burthen of their age, if they live to the time. It is most certainly true, a course of wickedness doth wonderfully hasten both old age, and death itself. *The wicked man shall not live out half his days, Psal. lv. 23*; nor shall he keep off decrepitness half the time; *his honour shall be given away, and his years unto the cruel, Prov. v. 9*. And beside the hastning of these evils, he doth infinitely augment them both for number and quality, he shall have a thousand fold more, and a thousand fold greater: Every sore shall be a plague, and every ach shall be an hell unto him; but this
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is not the condition in this text described, but the declension of man's life as a man; and that from this second reason drawn from the context. When I look immediately before the description, I find youth mentioned, *Remember thy Creator in the days of thy youth*; when I look immediately after it, I find death described, *The dust shall return to the earth as it was, and the spirit shall return to God that gave it*. Now as youth and death are appointed for all living, without any discrimination of him that sweareth, or him that feareth an oath, as terms *à quo*, and *ad quem*, of their pilgrimage; so this state also, as an intermediate stage, is as certainly appointed to them all, unless it please God before that constituted time, to give them a deliverance by immature dissolution. It is said of old age,

*Expectata diu votisque optata secundis,
Objicit innumeris corpus lacerabile morbis.*

Ausonius.

Though this state be never so much desired of men, yet when it comes, it brings along with it abundance of all manner of evils, as the following discourse will sufficiently make appear, and therefore may well be called, an evil state.

But here I must needs meet with this most obvious objection: Is not old age a great blessing from God, *Prov. xxii. 29*, and are not gray hairs an honour, *Gen. xv. 15*, do not you call
that

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that evil, which God calls good? *Gen. xxv. 8.* How often in scripture is it said, *A good old age,* *Judg. viii. 32.* *1 Chron. xxix. 28.* and counted as a privilege? I must needs therefore here distinguish of old age; and consider it in a three-fold state. First, crude, green, and while it is yet in the beginning, while men are able to do business, and go about their employments, and this is but one little remove from manhood, and doth immediately border upon it. The second is, full, mature, or ripe age; when men begin to leave off their employments, and betake themselves to retiredness; when God hath no more work for them, and they have no more strength for him; or lastly, extream sickly, decrepit, overgrown old age; in which it may be truly said, *Old age is perished, Job. xxx. 2.* *when their breath is corrupt, when their days are extinct, and the grave is ready for them, Job xvii. 1.* And this only is the state the wise man here so rhetorically describes. And that age which is so often called good, I take to be the second before mentioned state; and so much the rather, because in most places where it is said, *they died in a good old age,* it is also added, *and full of days;* by which I understand, not a fulness of possibility, that they lived so long, as from the principles of their composition, they could not have lived any longer; but a fulness, as I may so say, of satiety; they had enough of living, they lived as long as living was good, they lived to

a full, ripe, and mature age; such an one as would force them to be of the mind with him in the fable, to refuse immortality in this present life; and earnestly to desire it in a better*. There is an excellent illustration of this in the speech of *Eliphaz*, wherein he sets down the special providences of God towards them that fear him, and are bettered by correction; *Thou shalt come to thy grave in a full age, like a shock of corn in its season*, Job v. 26. Now if a shock of corn stand very long in the field, it sheds, and is spoiled, and the season of it is as well lost, as if it had been taken in too green. *Jacob*, most certain it is, died in this good old age as well as others; yet he himself saith unto the king, a little before he died, that the days of his years were few, and he had not attained the days of the years of his fathers in their pilgrimage, *Gen.* xlvii. 9.

Had *St. Paul* departed when he had fought the good fight, finished his course, and kept the faith, *2 Tim.* iv. 6, 7. and was ready to be offered; he had surely died in a good old age, although his pulse had not then beaten above threescore years. Now, most certain it is, that the arriving at this state is one of the greatest outward blessings that man is capable of in this life. Nor dare I say otherwise, if it should please the Lord to protract the life of man to the extreamest point it is capable of; if he should

* *Titbonus.*

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should withhold his hand from pushing down the house which he hath made, and let it fall to decay upon its own principles, his forbearance would be the greater, its fall would be the lesser; however in the mean time, it would stand most ruinate, deformed, useles, and incumbred with infinite inconveniencies, that it was never liable to before;

*Heu quàm continuus, & quantis, longa senectus,
Plena malis.*

But this is not all, it is not only an evil age, but there is no pleasure in it; as there is no condition that frail mortality is capable of so good, that hath not a participation of evil; so there is scarce any condition so evil, that is not attempered with some good; but this seems to be excluded from such a mercy as this. It is said of a good companion, *she will do a man good, and no harm all the days of her life: Prov. xxxi. 12.* But contrariwise, it may be inverted concerning this bad and morose companion, *she will do a man evil, and no good, so long as she continueth with him.*

I have no pleasure in them.

I take *pleasure* here also in the best sense, not for any sinful content whatsoever, not for the lusts of the flesh, the lusts of the eyes, or the pride

of OLD AGE.

pride of life, 1 *John* ii. 16. but for those lawful pleasures and repasts both of body and mind, that the nature of man, while able, might comfortably have solaced herself in. The mind of man busying itself, and taking contentment in the speculation of natural causes, the body of man in all its outward senses, in all its internal appetites, sporting and refreshing itself in all proper and peculiar objects ; but no such refreshments as these in old age ; which is a principle so well known to be true, and so much rooted in the judgment of men ; that the news to the contrary (though brought immediately from God himself) did, at the first, startle, and put a very hard stress too, upon the faith both of the mother and father of the faithful. Pleasure in old age, (and to such persons who were as good as dead, and with whom it had ceased to be after the manner of men and women) was such an incredible thing, as both *Sarah* and *Abraham* laughed at the news, *Gen.* xvii. 15, 16, 17. which laughter as it might proceed partly from a confident affiance upon the word of God, and a contentation thereupon, (as is usually said) so partly without all doubt, from that reluctancy they found in themselves, and those heart-risings, and internal arguings against the reception of those joyful tidings, *Gen.* xviii. 11. the spirit indeed was ready, but the flesh was weak. And this will sufficiently appear in the text, from the grounds of their laughing,
their

their reasoning thereupon, and from the Lord's answer to them both, and what pains he takes, and what arguments he useth further to persuade them, that it should be so indeed as he had promised.

There is a learned commentator * saith upon the word עֵצָה here translated pleasure: *Hebraea vox non modo voluptatem, sed etiam negotium quodlibet opusve significat*; the original word, saith he, signifieth work and business, as well as pleasure, *Eccl. iii. 1.* And so indeed it doth, and may very well do in this place. When decrepit age is come, a man's work is at an end, he is able to do no more. Solomon saith, *there is no work, nor device, nor knowledge, nor wisdom in the grave whither thou art going, Eccl. ix. 10.* Now old men are very near it; our *English* proverb is, They have one foot in the grave; they have no more work to do, their course is finished, and their time of departure is at hand.

V E R S E 2.

While the sun, or the light, or the moon, or the stars be not darkened, nor the clouds return after the rain.

HAVING before in general shewed this state to be miserable, he now comes to tell us wherein these miseries particularly consist. I must here be necessitated to go an untrodden path,

* *Lorinus.*

path, and possibly an unacceptable one to some. As for all those interpretations that are beside the allegory, you know I have already waved them, and therefore shall not so much as mention them in this verse, nor in the whole ensuing discourse. As for those that say, the sun, and the light, the moon, and the stars, signify the several ages that man must pass through, as was before hinted; they make this allegory, not so much a description of old age, as of the way to it, and therefore are not to be admitted: forasmuch as this is the description of compleat and perfected decrepit age, as you have already heard. There are that take these luminaries absolutely literally, for the several heavenly bodies as they stand fixed in their orbs, and differing from one another in glory. But unto man in this state they are not really darkened, for as they communicate of their light and influence equally both to the good and bad, to the just and unjust; so also, to the young and old, to the strong man, and to the feeble, by reason of his age. And then it must of necessity be understood, *per hypallagen*, only that they appear so to them, by reason of their inability to receive their light, and by reason of the weakness and dimness of their outward sense. And so this opinion will in effect coincide with the following, which is indeed most considerable. And that is, that these lights are metaphorically here expressed, and do principally allude to the lights of the
body

body. And this interpretation doth principally and primarily arise and take its authority from the *Chaldee* paraphrase; which is by interpretation as followeth: *Antequam mutetur splendor gloriæ faciei tuæ qui assimilatur soli, & lumen oculorum tuorum antequam obcæcetur, & decor maxillarum tuarum antequam obtenebrescet, & pupillæ oculorum tuorum qui assimilantur stellis antequam extinguantur.* And after this, men of very great names have walked in the same steps. But as most other interpreters seem to strain the metaphor too far, and carry it beyond the signification of the natural parts of man; so these seem to me to draw it too straight, while they keep it within the compass of the external parts of the body. And so much the rather, because by this exposition is intimated only the change of the countenance towards deformity, which is sufficiently elsewhere expressed, as you will hear anon; and the dimness of the sight, which is far more plainly expressed in the latter end of the third verse, *nemine contradicente.* And that in this brief description the wise man should tautologize, is not to be supposed. On the other hand, it is not to be imagined, that any infirmities appertaining to this state, especially those of the mind, which are the greatest of all, should be neglected herein.

Omni membrorum damno major dementia.

Now as *Dalilah* said to *Samson*, *Thou hast mocked me these three times, and hast not told me where-*
in

in thy great strength lieth, Judges xvi. 17. so might it be said of *Solomon*, if he should take upon him to describe any thing, and do it but in part, and so deceitfully, that he should neglect the principal part, wherein the great strength lieth; but I am otherwise persuaded; that he hath here told us all his heart, and that there is no remarkable infirmity, either of body or mind, that belongs to age, which is not contained in this allegory. Now forasmuch as all the symptoms in the four following verses belong properly to the parts of the body, as you shall hear, I take this verse to be a description of the infirmities of the internal powers of the soul; and why most divines do on set purpose avoid this interpretation, which is so plain and obvious in this place, I cannot tell, unless it be because they are so much taken up with the contemplation of the soul of man, that they forget it hath any thing at all to do with the body. There is a vast difference between the soul of man as it is in its united state, and as it is in its state of separation. It is not sent from heaven into the body as an assistant only, or like some tutelar angel, with commission and full power to guard, protect, and counsel that person, towards which it is for a season the deputed minister. For if so only, then it might recount and tell us, how curiously it wrought for us in the lower parts of the earth, and what wonderful *ideas* it had before it, to have done further

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for us in that darksom region, had we been capable to receive them; yea, then it might accompany us beyond our pilgrimage, remaining in the body even after dissolution, and taking care for our burials.

But the case is far otherwise, it is sent to inform the matter, and together with it to make up one *compositum*, the man being not the one, nor the other; but most properly that which doth arise from the perfect union of them both; and whatsoever is predicable of the whole, is predicable of the parts united; whatsoever may be said of the man, may be said of the body and soul united; and as they are thoroughly joined together, so they do intimately participate one with another, they are cleansed; they are defiled together; they are bound, they are loosed together; they are well, they are ill together: If *the flesh upon him have pain, the soul within him shall mourn*, Job xiv. 22. they grow up together, they stand together, they decay together. How often are persons in scripture said to grow both in mind and body, and eminently concerning our Lord, which is *instar omnium*; he encreased in wisdom, in stature, in favour both with God and man, *Luke ii. 52*. The soul is as weak as the body, both at first and last; *senes bis pueri*, is a known maxim, and daily experienced; and by all men understood of the feeble understanding. *Anima* comes into the world, *tanquam rasa tabula*; and it goes out

out *tangquam derafa*. The soul appears at the first as an unwritten table-book, and when it disappears at the last, it becomes blank as it was before. Job's pious and patient exclamation, *Naked came I out of my mother's womb, and naked must I return*, Job i. 21. may be well extended to a separation, not only from the goods of the body, and estate, but from those also of the mind; which hath nothing at best, but the beginning and ground-work whereof, at the least, is picked up from the communication of the outward senses, and when those publick intelligencers fail, so also doth this their Lord and master. And therefore, by the sun, light, moon, and stars being darkened, we do positively assert to be meant, the most inward powers of the mind, in this state do, together with the outward members of the body, weaken and decay.

But it may be here said, is the whole inward man liable to this decay? Is there not something in man, while in this state, altogether independent of the body? and perfectly free from the frailties of age? Doth not the scripture in many places seem to speak of renewed strength in this state of weakness, and plainly prove, *that while the outward man decays, the inward man may be renewed day by day*? 2 Cor. iv. 16. For the right understanding of this, and several such places as these are, we must of necessity distinguish of the inward man. There is the

inward man of the head, (as I beg favour to say, since the soul of man there chiefly doth exercise its principal faculties) and (since the other contradistinct term is so appositely given in scripture, *viz*) the inward man of the heart ; plainly, there is the inward man of nature, and the inward man of grace ; there is the inward man of the first-birth, and the inward man of the second-birth, or of regeneration. Now I speak here concerning the former of these, that hath its decays as age comes on, not at all concerning the latter ; and as I have before excluded a state of sin from the text, so I do here wholly exclude a state of grace. The partial falling from divine grace, is not so much as aimed at in this place of scripture, as the total not in any. Most certainly true it is, that the work of grace stands upon its own foundation, not at all depending upon the principles of humanity, either for its creation, or renovation ; forasmuch as the Holy Spirit of God, who is as much at liberty as the wind, is both the begetter, and the strengthener. And as a man may be born when he is old, *John* iii. 4. contrary to the reason of *Nicodemus*, so also may he be fresh and flourishing in his old age ; *Those that be planted in the house of the Lord shall flourish in the courts of our God, they shall bring forth fruit in old age, they shall be fat and flourishing.* *David* prays, *O Lord when I am old and gray-headed forsake me not,* *Psal.* ix. 13, 14. spiritual deser-

tions and spiritual manifestations, are immediately handed out from God, and do not at all depend upon the mutability of the nature of man, nor accompany him in the several changes.

They are only the several lights of nature, which, as age comes on, fall to decay without remedy. Now, as God, in making of the greater world, said, *Let there be lights in the firmament of heaven to divide the day from the night; and he made two great lights, the greater light to rule the day, and the lesser light to rule the night*, Gen. i. 14, 16. he made the stars also: So also hath he done in the little world of man; he hath made two great lights, (as they are set down in this verse) the one, *viz.* the greater, to rule the day of man; which is that clear shining part of man, whereby he is differed from all other created beings whatsoever, and discerns himself so to be; and this I understand by the sun, and the light: And the other, *viz.* the lesser light, to rule the night of man, which is that darker discerning part of man, that hath very little, or no light in itself, neither doth distinguish him from irrational creatures; and this I understand by the Moon; he made the stars also, as it followeth yet more plain.

The S U N.

By the sun, I understand here the most superior power of the rational part of the soul of

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man, that primary light of the understanding, that doth at once both receive the species as they are communicated from the imagination, and also render them intelligible to the mind; that pure innate light of the mind, without which no man that comes into the world, can either apprehend what is from without transmitted to him, or actuate any of those phantasmes which are already impressed. This we may see illustrated by the light of the body, which is the eye: For in the eye there could be no perception of any outward object, unless there were an inward implanted light in the proper organ, which doth both dispose it to receive the visible species, and render them proportionable to the organ, giving them thereby actual representation. Now that which this implanted light of the eye doth in vision; the same doth this Sun of the soul in the understanding. This is that which in scripture is so often called the spirit, or the spirit of the mind, *Prov. xx. 27.* And sometime in a distinction from the soul, as where it is said, *I pray God your whole spirit, soul and body may be preserved blameless to the coming of our Lord Jesus, Eph. iv. 23. 1 Thes. v. 23.* Now, because this is a difficult point, and hath gravelled most undertakers, I will give one essay more, and that from scripture-light, which hitherto may not have been taken notice of, to the present purpose; it is said, *The word of God is quick*
and

and powerful, and sharper than any two-edged-sword, piercing even to the dividing asunder of soul and spirit, and of the joints and the marrow, Heb. iv. 2. Among many other truths, this place doth afford us this for one ; that it is very difficult to divide or distinguish between the soul and the spirit, because there is an intimate communion and conjunction between them ; such an one as in some measure bears proportion with that, which is between the joints and the marrow. Now because this latter of the parts of the body (though hard in itself) yet is far easier to be understood, than that former of the parts of the mind ; let us well consider this, and possibly it may give us some light to the other. The joints are the turning places of the body, upon which all the actions of the limbs are performed, and therefore they are articulated several ways, according as the position, alteration, motion of the adjacent parts do require ; these are the most visible acting parts of the body ; the marrow (by which we are to understand not *medulla ossium*, the marrow of the bones ; but the *medulla spinalis*, the marrow of the back ; for this hath much more intimate communion and conjunction with the joints than the other hath) is the apprehending and instructing part of the body, that which carries the impressions of external objects to the inward sense, and reconveys the mandates there-

of to the members of the body, to be put in execution upon the joints. *Ejus munus est spirituum copias & motuum obeundorum instinctus extrà deferre, atque sensibilibus impressiones intus convehere* *; this is the secret inward influencing part of the body. In like manner, the soul is the most apparent active part of the mind of man, whereupon all its operations, both speculative and practical, are turned and performed; of which there is a particular account given in the explication of the following word: but the spirit is a more mysterious, and hidden power, that doth most secretly, and undiscernably, both gather up those intimations that come from without; and also give forth an effectual influence upon the whole inward man, to put all its well regulated commands in execution upon the soul: Both which offices of this Sun (*viz.* both of reception from the outward senses, and actuation of the inward) is very clearly expressed in that speech of Zaphar unto Job; *I have heard the check of my reproach, and the spirit of my understanding causeth me to answer.* As if he had said, I have received through mine ears the sound of my reproach, and an answerable impression is made upon my spirit; and the same spirit also hath drawn forth my understanding into act, towards the formation and production of an answer. And this is the constant manner of the opera-

* D. Willis, c. 29.

operation of man's understanding; this is also that part of the mind, which *Aristotle*, and all his followers, meant by their *Intellectus agens*; this is that candle of the Lord, or light within them, which the unsound teachers of old, and those more innocent ones of late*, would have to be a sufficient guide to everlasting life: But if it be so, it will be good hearkning to it, while it doth remain in its strength; for this Sun also, as years come on, doth certainly decline, and great must that declension be. *For if the light of the body, which is the eye, be darkness, great must that darkness be*, Luke xi. 34. much more surely if the light of the soul, which is the Sun, be darkned, how exceeding great must that darkness needs be! Indeed, there must be a defect in the whole understanding, when this *primum mobile* can scarce act any longer; and therefore it is, that the apostle speaks concerning the spiritual understanding, alluding therein unto the natural; *Having their understanding darkned, through the ignorance that is in them, because of the blindness of their heart*, Eph. iv. 18. When there is ignorance to receive, and blindness to guide, in this principal faculty, all those which are thereby acted, must certainly be weakened, as the next word doth clearly import.

The LIGHT.

By the Light therefore, I understand all those more inferior powers of the rational part of the
soul

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* *Pelagius.*

soul of man, that are any way set on work by vertue of the principal Agent ; which is an efflux from the before mentioned sun ; the possible understanding also, in all its operations participates in like manner of this state of weakness. Now the operations of mans understanding are various, both *ad extra*, in respect of the objects ; and *ad intra*, in respect of the will.

The first, are speculative, the last, are practical. The first (whereby the understanding is conversant about things as they have in their own nature a distinct being) are principally three. The first is perception, or the simple apprehension of an object, from the immediate impression thereof by the ministry of the before-mentioned sun. The second is composition, or complexion, whereby we try, and weigh the particulars that we have before received, and compound, and divide, join, and separate one thing from another, as may be most convenient for the improvement of them, to their appointed ends. The third is, reason, or discourse, whereby we gather up to ourselves somewhat farther than we understood before, and make our selves masters of a new and better knowledge, which the things themselves received, as in themselves, could not administer.

The last (whereby the understanding is conversant about things as they are good or evil) may also be reduced to three. The first is conscience, which is a reflection of the understanding

ing upon a man's actions, together with a sentencing them to be good or evil, according to those unquestionable principles which are already received. This is the search which the candle of the Lord makes in the lower part of the belly, *Prov. xx. 27.* The second is direction, or judgment, whereby the understanding doth propose an end to be desired and prosecuted, the execution of which, that is, the resting satisfied in, and desiring of that end, is that which moralists ascribe to the will, and term βέλησις. The third is consultation, or βέλευσις, the reasoning about the means to attain that end, together with an inquisition and collation of several means among themselves, and an election of those which are most proper, the embracing of which, and putting them in execution, is that which they call προαίρεσις.

Now these, and all the operations of the rational soul, however they may be distinguished, have in this state an answerable imbecillity. Be a man never so apprehensive, be he never so ingenious, be he never so rational, be he never so conscientious, be he never so judicious, be he never so prudent; when his Sun begins to set, and his Light to decline, he must become weak as another man, nay, weak as a child. And this the author of our description here, though he so well knew it, and foresaw it, yet was not able to prevent it in himself, but found his own words sadly verified in his own condi-

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tion. For it came to pass when Solomon was old, that his wives turned away his heart after other Gods, 1 Kings xi. 4. he that for understanding surpassed all men, since God gave unto him wisdom more than to any man, before him, or since, to this very day; and for light of conscience also, since the Lord had appeared to him twice, v. 5. 7. yet, when he was old, he fell to such irrational, sottish, senseless abominations, and that only by the seduction of women, as nothing but the frailty of age could possibly have given way unto.

Now as the soul is, by reason of age, weakened in the directing part, which usually is called, the understanding; so also in the executing part, which usually is called, the will. Old men when they do apprehend an end, and the means to attain it, they hesitate about prosecuting the mandates of the mind, and stand for the most part timorously and child-like at, *shall I, shall I*. I find one commentator upon the place say, *Non fruitur libero arbitrio**. There is not a ready embracing, nor a free acting towards the attainment of what is by the understanding first dictated. Farther yet, old men are very easily drawn off, and led aside from their own intentions, every weak suggestion is too strong for them, and takes them captive at pleasure; and as our Saviour said to *Peter*, though in another sense, so may it be said to every one who shall live to the time, *When thou wast young,*
thou

* *Latinus.*

thou girdedst thyself, and walkedst whither thou wouldest, but when thou shalt be old, another shall gird thee, and carry thee whither thou wouldest not, Joh. xxi. 18. A man shall not then be master of his own actions, but be very liable to the seductions of whomsoever shall beset him.

And thus by these two words, the Sun, and the Light, you perceive is meant, the whole rational soul, with all its powers and operations, as it may be found exercising itself both inwardly and outwardly. And tho' here be two words more significantly set down, for the fuller and clearer manifestation of what is here intended, yet it might have been expressed (though not so plainly) by one word only. And therefore it is, that the *Syriac* translation, and some followers of it, have only the Sun expressed: *Antequam Sol obtenebresceretur*: for the Sun may signify, not only that light which is contained within its own body, but all those emanations that illuminate whatsoever is thereby enlightned. And the woman's candle in the gospel, by which she found her groat, might signify, not only the light in the candle itself, (which answereth here to the sun,) but all the light in every part of the room also, (which answereth here to the light.) And thus we find the greater light, which rules the day of man, to be darkned; the lesser, which rules the night, is that which followeth.

The M O O N.

By the Moon we must understand that other part of the soul of man, which is not in itself rational, μετίχει μέρτοι πῇ λόγῳ, *Aliquo tamen modo rationis particeps*. I confess, reason may in man have some influence upon it, but in its own nature it is altogether devoid of it; it is that part of the soul which is usually called sensitive, and is common to all other animals as well as unto man; and in him is but the lesser light, and ruleth but the darker part only, and therefore may be most aptly expressed by the moon. It is conversant principally about those species which are communicated to it, from the outward senses; the operations about which are either simple, or compound: The simple operations are first to receive them as they are communicated from without, and then to retain them for so long time as it is exercising itself about them. Secondly, to dijudicate them as they are in themselves, and to discern them as they differ from all other whatsoever. The compound operations are excellently described by a modern author of our own*; who saith, that the liberty of the imagination is threefold, either composition, or new mixing of objects; translation, or new placing of them; creation, or new making them. Now all these, or whatsoever else may be

* Dr. *Reynolds* upon the faculties, p. 24.

be comprehended within the compass of the pure sensitive part of the soul, are but the operations of one faculty, and therefore by one word, are most fitly here expressed. And though the philosophers have usually distinguished them into more, as into the common sense, the fancy, both estimative, and cogitative; yet really and truly they are but one: for as one superior faculty in the superior part of the soul, which is the understanding, could both receive, compound, and collect, as you heard before; what hindereth but the same may be done in the same manner in the inferior? And we are not to multiply faculties without necessity. Beside, the ground of their variety is not to be admitted. For they supposed the operations about their objects to be divers, attributing perception and discerning to the common sense only, dividing and compounding to the fancy.

Now the fancy doth as well perceive and discern, nay, better too, than the common sense doth; and the common sense may be said to compound, and divide, as the fancy doth: Therefore some, more quick sighted of late, perceiving this ground not sufficient, that they might be sure to uphold *Aristotle's* division of the inward senses, have found out another way, and say, that the common sense is conversant about a present object only, the fancy about that which is absent; but this seems as weak as the former, and that according to the Peripatetic

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Doctrine; forasmuch as the fancy is conversant about an object only while present with it; indeed it can detain it a while, until it have done its work about it; so can the common sense also; and it can receive it again after it is passed away, and operate upon it anew, but for this it must be beholden to the memory, and can do nothing upon an object by its own strength, but while it hath it present with it. I argue this, only to shew that they are but one faculty, and therefore by this one word, *viz.* the Moon, they are both represented: which (as the more superior powers of the soul, and all the members of the body,) hath in this state of weakness its answerable declension. I confess, with *Aristotle**, if an old man had a young man's eye, he would see as well as a young man; but I deny that which I suppose he meant by it, that is, that he would perceive and discern as well as a young man, unless he had a young man's internal faculty also. It is one thing, to see, it is another thing, to know that a man sees, and to distinguish what colour, and what figure he sees. As age brings a weakness upon the outward senses, so that they cannot see, so also upon the inward, that they cannot discern could they see; and this is most significantly expressed by old *Barzillai*, when King *David* would have had him, to feed him at his own table; *I am this day*, saith he, *four-score years old, and can I discern between good and evil?*

* *Arist. de anima, lib. 3.*

evil? Can thy servant taste what I eat, or what I drink? Can I hear any more the voice of singing men, and singing women? 2 Sam. xix. 35. He first expresseth his inward decay, I cannot discern; and then his outward, I cannot taste, nor hear. It is proper to the outward sense, to taste and hear; but it appertains to the inward, to know whether the objects both of tasting and hearing, and of all the other outward senses, be good or evil. And thus old *Isaac* was imposed upon, not only in respect of the dulness of his outward senses, (all five of which are mentioned in that one chapter, where his younger son is said to come with subtilty, and take away the blessing, *Gen. xxvii.*) but chiefly in respect of the weakness of his inward sense, wherein he was most mistaken; for *he discerned him not*, ver. 22. And thus you have the lesser light, that rules the night of man darkened, as well as the greater, that rules the day; that which is subservient to them both, is that which followeth.

The STARS.

By the Stars, I understand, πάντα μνημονεύοντα, All those species whatsoever, either rational or imaginary, that (like the stars in their orb) stand fixedly treasured up in the memory. Now the stars do not properly pertain either to day or night, but are distinct luminaries from the the rulers of the day and night, and subservient to

to them both ; and do communicate both day and night, to all inferior bodies, of their influences, and also of their light ; for although the greater light of the sun in the day time doth cause them to us to disappear, yet they are still shining, as is sufficiently demonstrated in the eclipse of the sun, when that greater light is darkened ; or in the narrow and long contraction of the visible species, either by art, in glasses, or naturally, if a man stand at the bottom of a deep and narrow well, then will the stars give their light apparently at noon day. In like manner, all the species and representations of things that are past, whether they are the product of the day or night, that is, as you have heard, either of the understanding, or of the fancy, are treasured up in one single faculty of the memory. And that the stars have belonged only to the night, hath not been a more common mistake among the vulgar ; than that the memory belongeth only to the imagination, hath been among the learned. And therefore they have much troubled themselves, and confounded others, in finding out another receptacle of the intelligible species, which they call reminiscency or recordation ; as though one and the same faculty were not able to retain the species that are of a diverse nature. The ground of this mistake hath principally risen from this ; that they have given more unto the memory, than properly doth belong unto it, in that they
have

have assigned unto it three operations, viz. reception, retention, and rendition; that this faculty doth not only keep, what is committed to it, (which indeed it doth most faithfully,) but that it doth also take into custody, that which it keeps; and deliver it up again, when called for; hereby making the memory, both *condus*, and *promus*, of the things therein contained, and giving unto it such a power, as many noblemen to their butlers, whereby they become more masters of what is contained in their cellars than they that made them. Now if we will divide aright, and give unto the memory that which is its; and unto the understanding and imagination that which is theirs; we shall soon understand how species of a diverse nature, whether sensitive or intelligible; more or less spiritualized; and diversly circumstantiated, in respect of time, or place, or whatsoever else may alter them; may easily be contained within the the same faculty without multiplication. Say we, that the understanding and imagination, as they make their several species, so also they take them, and they lay them up in the memory as they are by them altered or circumstantiated; and as they have occasion to make use of them, they look for them, and find them treasured up in the same nature, order, and manner, that they put them in; and from thence they themselves take them out again: The memory in the mean time doin;
no.

nothing at all, towards either the receiving them, or delivering them up, but only exercising its passive power in the keeping of them; which keeping also is nothing else, but the duration of that impression (without any act, or endeavour, or knowledge, on the part of the memory) which the more superior faculties make; the memory being most truly that which the philosophers have usually said of the will, *cæca potentia*; keeping those things committed to its charge, with no more knowledge, or action, than the wax doth the impression, or the paper the writing thereon made, or the coffer the treasure therein deposited: Which being so, it may easily contain things of a divers nature, and as much diversified in respect of circumstances, as the superior faculties can possibly make them. The same coffer may easily preserve the gold of one man, and the silver of another, till they each of them come, and take their own goods again. And thus we understand, that the power of this faculty in man is only passive, and its only work is to retain those things that are committed to its charge; which work it performs with great trust, so long as man abides in strength, but as he declines in age, so also doth this faculty in its use; not only unfaithfully and confusedly retaining the images that are made upon it, but oftentimes letting them slip.

—Nec

Nec

*Namina servorum, nec vultum agnoscit amici
Cum quo præteritâ cœnavit nocte, nec illos,
Quos genuit, quos eduxit.*

And as it is said, concerning the greater world, when it shall draw towards its end, *The sun shall be darkened, and the moon shall not give her light, and the stars shall fall from heaven, and all the powers of the heavens shall be shaken*, Mat. xxiv. 29. so also may it as well be said in that world's epitomy, Man: As he shall draw towards his end, his understanding shall be darkened, his imagination shall be weakened, and withhold its light, and those things that were fixed in the memory shall fall from thence, and all the powers of the mind shall be broken; and this is that which to me seems the true meaning of this second verse.

And hence we may gather how sad man's condition must needs be in this last Age of his, in respect of his mind. The diseases and symptoms which do necessarily arise from the darkening of these luminaries are these which follow. *Mentis imbecillitas, hebetudo, stupiditas, fatuitas; μῆγρος, (i. e.) stultitia, tarditas ingenii, judicii defectus; ἀνοία, (i. e.) amentia, melancholia, desipientia, memoria imminuta, abolita.* And these proceed from the darkning of the several and particular lights; there are others
also

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also incident to age that shake all the powers of the heavens at once, and they are *Vertigo*, *Carus*, and *Apoplexia*. And these are the miserable attendants of this feeble state, which is so much the more to be lamented, by how much the less it is to be helped. Sad are the infirmities before mentioned in any age, and most difficultly do they receive their cure; but in this they admit of none at all. Some means may be by physicians used for the proroguing of of them, and keeping them off for a time; and for the mitigation of their violent assaults, but for the total preventing, or the absolute curing, let no man living hope for.

And this the ensuing proverb doth sufficiently confirm.

Nor the clouds return after the rain.

Having before shewed, that the precedent words do not signify the infirmities of the eyes, I need say no more, to shew that these do not intimate the rheums or distillations from the eyes or head, falling upon any of the subject-ed parts. It will be enough plainly to declare, that these words signify, that the miseries and infirmities of old age, do unceasingly and unavoidably succeed one upon another, as the showers in *April*. And they are placed here in the midst between the descriptions of the infirmities

mities of the mind which preceded, and those
 of the body which immediately follow; as
 having reference to them both. Whereby
 we must understand, that all the infirmities that
 appertain to this state, whether they be those of
 the mind, or those of the body, do immediately
 follow one upon another, and one paroxysm
 upon another, and that without remedy. *Nu-
 bes post imbrem*, is a known Adage, signifying,
 the speedy succession of miseries upon miseries;
 as on the contrary is signified joy and happi-
 ness, after affliction, by that proverb, *Post
 nubila Phœbus*. The infirmities in this allegory
 mentioned, if they shall at any time fall upon a
 man in any other age, may possibly be eased:
 And if so, there is good hopes that they may be
 kept from reintegration, or ever returning
 more; but in this age no such hopes; if their
 violence may possibly be for a time remitted,
 yet they will as certainly return again, as the
 clouds after a rain in a rainy season. Now
 when the weather is (as we usually say) set in
 to rain, it is wonderful to see, how quick the
 clouds will rise and ride one after another,
 and every one, the smallest of them, pour
 down rain upon the earth beyond all expecta-
 tion. And if there shall be any small interval
 between shower and shower, and the sun at
 any time begin to peep out between the clouds,
 it is soon darkened again; and the clouds re-
 turn thicker and blacker, and the showers
 greater

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greater and longer, than they were before. This is a most lively representation of the infirmities of the decrepit age of man; wherein as deep calls unto deep, *Psal. xlii. 7.* so one grief, pain, weakness upon another, until all the waves and billows thereof are gone over him.

Velut unda supervenit undam.

And if nature shall be able at any time to gather up herself, and unite all her force, to give a glimmering light through the darkness that oppresseth her; yet it it cannot long continue, but a greater darkness will presently succeed, as it is in the light of a candle, which is almost consumed in its socket; sometime some light appears, then presently it is darkened again, and some such interchanges may be for a season made, but it will grow darker and darker, until at length it be quite extinguished. And that wonderful redintegration of the sight and teeth of the old minister in *Yorkshire* (like all those lightnings before death) was but the last and utmost endeavour of perishing nature, *Et quasi mox emorituræ lucernæ supremus fulgor.* If old *Jacob* shall be able to strengthen himself, and sit up in his bed, at the news of his son's approach to visit him, *Gen. xlviii. 2.* yet his weakness must return again, and he must lie down in his bed again, and again, until at length he lie down in the grave.

If art shall be able to contribute any thing to the present allay of any of the miseries of this state, yet they will surely and unavoidably return again; if seeing delightful objects, or beloved friends, if hearing of news, or pleasant discourse, or melodious musick; if the prattling of grandchildren may give any divertisement or refreshment to the mind: if a more suitable air, convenient bathings, unctions, or frictions; if an easier bed, if savoury meat, *Gen.* xxvii. 4. or delightful wine, or any thing else, outward, or inward, that art can find out, may give any ease or refreshment to the body, yet the comfort of them will be but for a small season, and the former troubles will certainly return again.

If a young virgin, lying in *David's* bosom, shall cherish him a while, and administer that heat and comfort to him that cloaths could not do, *1 Kings* i. 3. yet it must be but for a time, and *David* must grow cold, and chill, and comfortless again, and that more and more, until he be taken into the house of all living. And this is the great misery that attends all the miseries of this miserable state, that they are altogether incurable; and though some refreshment may sometime seem to interpose for a season; yet they will all most certainly return again, as the clouds after the rain.

VERSE

V E R S E 3.

In the day when the keepers of the house shall tremble, and the strong men shall bow themselves, and the grinders shall cease, because they are few; and those that look out of the windows be darkened.

HAying sufficiently before shewed us, what the infirmities of the *mind* are in this condition, he comes now to treat of those of the *body*; wherein the body is most aptly compared to a building, or an house going daily to decay, and that cannot be repaired. And this similitude of the body, whereby it is compared to an house, is most scriptural. *David* saith, *Thy statutes have been my songs in the house of my pilgrimage*, Psal. cxix. 54. And *Paul* saith, *If our earthly house of this tabernacle were dissolved, we have a building of God, an house not made with hands, eternal in the heavens*, 1 Cor. v. 1.

Now the decays of this house in old age are many; four of which, *viz.* those in respect of the keepers of the house, the strong men, the grinders, and the lookers out of the windows, are mentioned in this verse, in the explication of which I shall be the briefer; because what I understand by them all, in this verse, hath been for the substance of them, formerly treated of by others. And here the current of inter-

interpreters hath run much what the same way, and left behind them less obscurity in these words, which are indeed in themselves the plainest that are contained in the whole allegory ;

The keepers of the house shall tremble.

I could willingly consent to those, that by this expression would have the ribs to be meant, were the predicate as applicable as the subject ; the *thorax* doth most safely keep, and excellently well defend the principal parts therein contained. And *Job* speaks of the fence of the bones, as of the sinews : *Thou hast fenced me with bones and with sinews*, *Job* x. 11. but how they shall be said to tremble, is not to be made appear ; forasmuch as experience doth sufficiently confirm, that they stand as fixed in old as in young, and more fixed too. And indeed their articulation, both to the *sternon*, and also (and especially) to the *vertebræ* of the back, is such, that they admit of very little and obscure motion, but not at all of this trembling. And therefore we must find out some other parts of the body which are the constituted keepers of the house ; and they certainly can be no other than *the hands*. Now the anatomical hand contains not only the *carpus*, *metacarpus* & *phalanges digitorum*, but the whole superior *artus* ; all those higher parts of the limbs that are divided from the trunk of the body, and

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there-

therefore it is well divided in *brachium, cubitum, & extremam manum*. And these are they which most properly are stiled the keepers or defenders of the house; and that which makes it the more unquestionable is, because they answer so directly to the strong men, as it follows in the next words. And these hands and arms do several ways keep and defend the house. And there is nothing more frequent in scripture than the expressing of defence by the power of the hands and arms; when *Jacob* blessed his son *Joseph*, he spake how he was defended from them that beset him, and saith, *His bow abode in strength, the arms of his hands were made strong by the hands of the mighty God of Jacob*, Gen. xlix. 24. And as if there were no other way of expressing preservation, defence, and deliverance, these members are almost always mentioned, and most frequently attributed to God himself; *They got not the land into possession by their own sword, neither did their own arm save them; but thy right-hand, and thine arm, because thou hadst a favour for them*, Psal. xliv. 3. And if there be any impotency in the hands and arms, a man is no longer able to defend himself; *Job* hath a most remarkable expression to confirm this truth; if ever he used his defence and help to oppress the fatherless, he wisheth that now he might be left altogether helpless, and that his defenders might be taken from him, or rendered wholly unserviceable to their

their ends ; *If I have lift up my hand against the fatherless when I saw my help in the gate, then let my arm fall from my shoulder-blade, and my arm be broken from the bone, Job xxxi. 21, 22.*

Beside this, they may be said to keep the house, in that they provide for it, getting maintenance for the whole body, for by working they get bread, *2 Thes. iii. 10. Paul saith, These hands have ministred to my necessities, Acts xx. 34.* And as they do defend the house, and provide for it ; so also they do offend whomsoever would hurt it ; they do not only get, but protect, and also keep off the adversary. And all this was done at once by the power of the hands of the Jews in their great necessity, when they were rebuilding the temple, their hands were thoroughly filled, and employed in a double defence ; *For they which builded on the wall, and they that bare burdens, with those that laded, every one, with one of his hands wrought in the work, and with the other hand held a weapon, Neh. iv. 27.* Now such, through the wisdom of God, is the dexterity of the hand, that it can employ a weapon to be a better defence to a man, than whatsoever is naturally allotted to any creature beside. And that audacious carper at the works of God (who complained that other creatures had naturally a defence given, and man only left weaponless) was sufficiently silenced, when it was told him ; man had reason and hands,

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which together, can make a better defensive or offensive weapon for him, than all the horns, and hoofs, the tusks, and talons, or whatsoever nature hath more largely lent to other creatures, can do for them. And if we thoroughly consider the fabrick of these parts, according unto what anatomy doth give sufficient light unto, we shall yet farther be convinced of the truth of this matter. If we consider on the part of the bones, first the *scapula*, and take notice that it is seated in the strong part of the back, with freedom of motion in its place, in which it is contained by the *clavicle*, and with great advantage of moving the arm which way soever it pleaseth; that it is formed with its basis, angles, ribs, processes, cavities, for the better seat of the muscles, and command of them to their appointed services; that it is articulated to the *humerus*, *per arthrodiam*, wherein the cavity is impropportionate to the head of the *humerus*, that the shoulder may thereby with greater facility and liberty admit of all manner of motion, which it could not possibly have done, had this articulation been any firmer and closer in itself. Now that this joint may be kept from luxation, either from itself, or from any thing that might fall upon it, to which it was very liable by reason of what was before said; it is sufficiently defended by a very thick, and nervous ligament; and by the broad tendons of four
great

great muscles; which do so strictly compass about the joint, that by its own motion, tho' never so violent, it cannot be put out; and also by the clavicle or kennel bone, which is so directly laid cross over it, that it defends it from all external violence whatsoever. Again, if we consider the *humerus*, its head, its neck, its pullies, its cavities, its extuberances; if we consider the *cubitus*, and the *radius*, and their divers articulation; the one being *per ginglymum*, which gives flexion and extension with strength; the other *per arthrodiam*, which gives pronation and supination with ease. Lastly, if we consider the bones of the extreme hand; and therein the eight bones of the *carpus*, which are joined to the *cubitus*, and to the bones of the *metacarpus per arthrodiam*, among themselves *per harmoniam*, if we consider the four bones of the *metacarpus*, and their articulation to the fingers *per enarthrosin*, the fifteen bones of the fingers, and their articulation among themselves, (for the firmer holding any thing in the hand) *per ginglymum*. Now I cannot pass the thumb in the general name of the fingers, without a particular and special taking notice of it; forasmuch as that above all the rest both in its use, and also in its repute, may be said to contribute chiefly to the keeping of the house; for it is equivalent to all the fingers, and therefore in *Latin* is called, *pollex*, à *pollendo*, being as it were an antagonist grasper to the whole

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hand, and doth as much towards the firm holding and dextrous using of a weapon as all the hand : And therefore it is that idle persons, or effeminate men, or whosoever are unfit for service in war, are called *polletrunci* ; as who should say, men that have not the use of their thumbs. And it was a custom among the nations, for the conquerors to cut off the thumbs of the conquered, thereby rendering them disgraced, and utterly unable for future employments either at sea or land. And scriptural story also seems to confirm this in *Adonibezek*, who said, *Threescore and ten kings, having their thumbs and their great toes cut off, gathered their meat under my table ; as I have done, so God hath requited me*, Judg. i. 7. Thus far on the part of the bones. Again, if we consider on the part of the muscles ; how they are variously shaped and formed according to their several uses, how they are perforated according to necessity, how they are seated to the best advantage, how they are to one another friends or antagonists, how they are derived from one part, and inserted into another, how much strength and vigour they have, how by their hormetick power and contraction into their own bodies, they can readily perform whatsoever motion the organ is capable of ; they can stir the limb inward, outward ; forward, backward ; upward, downward ; they can perform adduction, abduction ; flexion, extension ; pronation, supination.

pination, the tonick motion, circumgiration; and all these with so great expedition and agility, that they are much sooner done than said, yea, as soon done as thought on; the actions of the muscles keeping pace, nay, many times out-stripping the volubility of the mind: If we yet further consider them in their *tendons*, and the variety of them, how they are either solid, plain, round, broad, long, short, one, many; or of whatsoever form may render them most expeditious in their motions; how they are strengthened by several ligaments, especially that annulary ligament in the wrist.

I say, if we consider these wonderful things, wherein man differs from all other creatures, and many others, which good skill in the anatomy of these parts would easily furnish a man with, all which would be too large here to insert; it would enforce us to say, that these of all the parts of man do most properly defend him, and may justly be stiled, the keepers of the house.

Now, that these may be said to tremble, needs no words to make appear, forasmuch as the experience of every old man doth sufficiently confirm it. Which word doth comprehend within itself all the weaknesses, infirmities, inabilities of these parts in this condition: Whether they be outward, as stiffness, contraction, rugosity; or inward, as aches, pains, numbness, palsies, cramps, tremblings;

yet notwithstanding it hath, in a more especial manner, relation to that grand symptom, that doth most certainly attend this condition; which is called, *tremor artuum*, the continual and unavoidable trembling of the hands and arms. Now, forasmuch as the last age of man is eminently above all others he passeth, the cold and the dry; it must needs incline him, and at last most certainly cast him into this distemper.

For these two qualities, and, for aught I understand, these alone, are the natural fathers of this trembling child. If we remember how going abroad in a bitter cold morning, how drinking a great deal of cold water, or swimming in the water; if we know how the use of poppies, henbane, opium, the cold fit of an ague, and other cold things, will easily set us a shaking; if we consider that long fastings, great evacuations, especially venereal, which do most dry the nerves, violent heat in fevers, fluxing by the use of quicksilver, immoderate sweatings in hot houses, or elsehow, do cause the same distemper; we shall be induced chiefly to attribute this terrible symptom, to these two deadly enemies of a well tempered constitution, coldness and driness; which are so contrary to the instruments of voluntary motion, whose life and vigour consists in radical heat and moisture; that they take off their strength, and render them unable

able to perform their duties, making them so weak, that even the weight of the member they are to move, is now their equal antagonist ; for they going about to move the member as they usually had done, are resisted with equal force by the weight of that member, which causeth as it were a continual combat between the strength of the mover, and the weight of the moved, so that the limb is always drawn one way by that, and another way by this, which causeth a perpetual trembling of the keepers of the house ; which is reckoned here as the first, and indeed is one of the most remarkable symptoms upon the body of man in this decrepit state.

The strong men shall bow themselves.

Having before treated of the infirmities of the superior limbs, he comes now to those of the inferior ; the keepers of the house being the hands, the strong men can be no other than the feet ; now as the hand was divided before, so also is the anatomical foot, containing not only *tarsum*, *metatarsum*, and *phalanges digitorum*, but also *femur*, *tibiam*, and *extremum pedem* ; and as before I shewed, the beginning of the hand was to be accounted from the *scapula*, so here I must also tell you, that the beginning of the foot is from the *os ilium*. And those muscles which are inserted into the thigh, and have their use for the motion there-

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of; notwithstanding their origination may be either from the back, (inwardly as the chief flexor the *psoas*, or outwardly as the first extensor, *gloutæus major*) or from the *os-iliū* (as most others movers of the thigh have) ought all to be accounted into the number of the strong men. And if we well consider the true nature of progressive motion, and firm station on the ground, we shall soon conclude, that the instruments of them both (which are none other than those we are treating of) are the best demonstrators of human strength, and may more aptly than any other parts of the body be called the strong men. And this we may also have confirmed in the holy writings of God; the strength of the legs, as the instruments of motion, seem to be expressed by the prophet, when he saith, *He delighteth not in the strength of the horse, he taketh not pleasure in the legs of a man*, Psal. cxlvii. 10. their strength, as they are the instruments of firm station, is excellently expressed by the spouse, when she saith concerning her beloved; *his legs are as pillars of marble*, Cant. v. 15. And as they are the instruments of both, you have them notified in the story of *Peter's* curing the lame man, *Acts* iii. wherein (as if *the use of legs* (both for standing and walking) *and strength* were convertible terms, signifying the same thing;) we have his cure once expressed by these words; *immediately his feet and his ankle bones received strength, and he leaping up, stood*
and

and walked, ver. 7, 8. and presently after only by the word *strength*; his name, through faith in his name, hath made this man strong, ver. 16. I shall give but once instance more, and that most remarkable, having in it the great wisdom of God to express this thing; and that is the touch of the hollow of *Jacob's* thigh, *Gen. xxxi. 25.* when God would intimate to *Jacob*, his own weakness, and his inability to wrestle, and to prevail with God and man by his own strength; he smites him in the thigh. Thus he dealt also with *Paul*, *2 Cor. xii. 3.* who lest he should be puffed up with his visions and revelations of the Lord, (having been taken up to the third heaven, and so much spiritualized, that it was hard to say, whether he was in the body or out of the body) he had such a direct contrary infirmity laid upon him, that it might sufficiently take off all other men from admiring him, and himself from being lifted up beyond what he ought to be; *Lest any man should think of me above what he seeth me to be, and that he heareth of me, and lest I should be exalted above measure through the abundance of revelation, there was given to me a thorn in the flesh, the messenger of satan to buffet me, lest I should be exalted above measure,* ver. 6, 7. all occasion of glorying in his spirituality was abundantly taken away, when he had a continual memento of his carnal weakness, a thorn in the flesh. And thus also may *Jacob*, and all *Jacob's* children, for ever,

ever, be taken off from boasting in their own strength from his prevailing with God and man; since ever after he bare that most certain symptom of human weakness, halting on his thigh, for when this part is once rendered unserviceable, there can be no more strength to contend.

And the perfect conquest that *Sampson* got over the *Philistines*, whereby they were unable any more to resist, is expressed, *He smote them hip and thigh*, Judg. xv. 8. Beside, the counsel which is given to *Josuah* is worth our observing to this purpose, whereby he is taught to make the horses of the many kings he should suddenly subdue, for evermore unserviceable, and yet to save their lives; *Thou shalt hough their horses, and burn their chariots with fire*, Josh. xi. 6. Whereby we may understand, that if the back sinew of an horse's hind leg (wherein the great strength of these parts lieth) be cut in funder, he is made altogether as unfit for service in the war, as the chariots that are burnt. I might further yet confirm this truth by an anatomical enarration of the several compounding parts of these limbs; but forasmuch as I did that before, in the treating of the superior *artus*, I may the better omit it here; because there is a very great similitude between these parts and those spoken of before; and what was there said of them, as unto the parts, and also unto the dis-

diseases, may for the most part be translated hither, and said of these. And it is the principal argument that induceth me to believe that we are in the right in our interpretation of these two symptoms, because of the likeness of the parts we are speaking of, and also of the terms to express them. It is well known to all those that take delight to search into the wonders of God in the frame of man's body, that the shoulders, arms, and hands; and the thighs, legs, and feet are very much alike; so also are these two expressions, *the keepers of the house*, and *the strong men*. The diseases also of these parts in age are much the same, and so also are the words that here express them. For although we translate the latter word, *Shall bow themselves*; yet the vulgar *Latin* translate it, *nutabunt*, *shall nod or shake*; and doubtless, the original words are of very near signification, so that the *Syriac* translation, and the *Chaldee* paraphrase upon these words differ very little or nothing at all, but translate them both to trembling or shaking. However give me leave to take notice briefly of one or two things wherein these members differ from those before spoken of, and wherein their strength and use is principally made appear.

The bone of the thigh, is of all other bones of the body the biggest and the longest; and is called in *Latin*; *femur*, à *ferendo*, because as a strong man it doth sustain and bear the whole

whole weight of the body. It hath in the head of it three eminent processes. The first is the great and the round head, which is inserted into the large cavity of the hip, *per enarthrosin*, which admits of all manner of motion, and there is detained by a double ligament; the first is common, broad, thick, membranous, that doth strongly compass the joint about, and the other is a round, and cartilaginous ligament, which proceedeth out of the very head of the *femur*, and being inserted strictly into the cavity of the *os ischii*, doth firmly hold this bone in its place, that it cannot be moved. The other two processes are called, the *trochanters*, the lesser, and the greater; whereby the tendons of the muscles moving the thigh are more conveniently seated, that they may the better wheel about that limb to whatsoever position they please. It hath moreover at the upper end a more slender part, which is called the neck of the *femur*; which is so framed for the more convenient lodging of the muscles, and passing of the vessels, (*viz.* the arteries, veins, nerves,) for the use and benefit of the subjected parts. Its form also is most remarkable, in that it is on the external or forepart, gibbous, or bunching outward; on the internal or hind part, fimos, or bending inwards, which frame doth wonderfully conduce to the conveniency of sitting, to the firmness of standing, and to the dexterity of walking.

Lastly,

Lastly, It is articulated to the *Tibia*, *per laxum ginglymum*, which adds very much to the expedition in motion, and is of such a frame, that on the back part it leaves a most convenient hollow place, which we call *Poples*, the ham, for the passing down of the vessels; and on the fore part it is wonderfully defended by the *Patella*, or knee-pan, as by a shield, the form, and name of which, this bone doth continually bear. And it is so much the more to be observed, in that no such bone is in the superior *Artus*, nor in the whole body besides; for it is articulated to no bone at all, but is kept in its place by a double ligament, the one inward, which is that round, bloody ligament, which firmly annexeth it to the thigh; the other outward, which is the conjunction of the tendons of the four muscles which extend the *tibia*, which together make a broad ligament that doth encompass the whole knee, and strongly bind it in its place; wherein it exceedingly conduceth to the defending of the joint, over which it is placed. For that articulation being loose in itself (as was before said) would be very apt to luxation in sudden and great flexures of the knee, or in going down steep places; were it not by this shield bone abundantly strengthened, and sufficiently defended from all those inconveniences.

Moreover, the conjunction of the *fibula*, being otherwise than that of the *radius*, which answereth it in the arm; is well worth our observation.

nation to our present purpose; the *radius* of the arm is articulated (as you have heard before) *per arthrodiām* to the *humerus*, which renders it more expeditious as to several motions, and therefore more properly a keeper of the house; but the *fibula* is not at all articulated to the *femur*, but is affixed to the external part of the *tibia*, and doth stand as it were an underprop to that, whereby they may jointly with greater strength support the whole body, and be the more justly called, *the strong men*. There is yet one observation more from the anatomy of these parts, that doth with great delight and content demonstrate, that those are the keepers of the house, and these the strong men, and that is from the variety of their flexures; the hand in all its several joints, is bended one and the same way; the shoulder is bended inward, or forward, and extended outward, or backward; so also is the arm, the hand, the fingers, and this is for the better apprehending and comprehending any thing, and using any defence; and therefore they are the keepers of the house: The foot is bended in its several joints, several ways; one, one way; and another, another; the thigh is bended forward, the leg is bended backward; and again, the foot is bended forward, and the toes are bended backward; and this is for the greater conveniency of going, and for the firmer standing, and therefore these are the strong men.

And now I have shown you the strength of the body; and now I will show you the strength of the mind.

We

We might yet further and principally confirm this thing, by the several forms and uses of the muscles of these parts; for it is not so much great bones, nor great veins, nor a great deal of blood or fat, that makes a man strong; but great, and strong, and eminent muscles, they are the true indicators of strength. Now these parts of the body have bigger, stronger, and more raised muscles than any beside; and by how much the higher the tendons of the muscles are raised, with so much the greater strength must they needs perform their offices, and so much the more declare the strength of a man; and therefore we have an ordinary observation, and a probable one, to judge of a man's strength, or weakness, by the elevation or depression of the calves of his legs. I might also add many more observations of the like kind; but I desist, forasmuch as a good anatomist can furnish himself with enough; and he that is none at all, can scarce understand these, when he is told.

And because the great strength of a man lieth in these parts, therefore in his infirm and weak condition these parts must be more eminently feeble.

A child before strength comes on, and an old man after his strength is departed, must have but little use of these members. As it was said of *Asa*; *In the time of his age, he was diseased in his feet*, 1 Kings, xv. 23; so may it be said of all who shall live to that time. Now, forasmuch as what was said before of the infirmities of the hands,

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hands, may also be said of those of the feet, I shall chiefly refer you thither: However, because the word is here somewhat differently translated in our language, and we have no reason to complain, forasmuch as it doth primarily so signify; so that some have translated it, *pervertentur*, others, *curvabuntur*, and the *Septuagint*, διασφαῖον. I judge there is one grand symptom of age that in this place, and upon these parts, is principally aimed at; and that is the perversion, crookedness, abbreviation, and alteration of the position, of the several joints of these parts; and their inability of being reduced to a firm, straight, and tonick posture, wherein the strength of a man doth wholly consist. And it is wonderful well worth our observation, that if a man at his best and strongest estate should be kept in that bending posture, which age necessarily binds every man unto; he, in that condition, were scarce able to go, or stand, without the help of a staff; and the reason of it is plain, because the centre or gravity is not equally poised upon the *basis* of the feet; but hangeth as a weight behind, and therefore had need of another *fulciment*, upon which it might the more firmly rest. And therefore it is said of old men, *membra levant baculis*; when these members are perverted in their joints, and the tone of the muscles is so much relaxed, that they are unable to bring them to straightness again, there is great need of the support of a staff;

staff; for without it, there is an utter inability of going steadily, and standing strongly, which is the principal symptom intimated by the strong mens bowing themselves.

The grinders cease because they are few.

That there may in man's body be other grinding than mastication, or chewing the meat in the mouth; and other grinders, than the jaws and teeth, *the ensuing discourse* (and that there can be no other in this place intended, *this present discourse*) I hope, will make appear. Grinding all men know to be performed by two hard bodies, the one immoveable, upon which the grinding is made; the other moveable, which by strong compression against the former, and by its motion, makes the grinding; so that to it, there is necessary both these, *viz.* the firm stander, and the strong mover; the upper, and the nether millstone; as we have them often mentioned in Scripture, *Deut. xxiv. 6*; now answerable unto these in the mill, there are for that grinding which is performed in the mouth, two jaw bones, which are called the upper and nether *mandible*. The upper mandible, is compounded of eleven several bones, which among themselves, and to those adjacent are joined either *per futuram*, or *harmoniam*, which admit of no motion at all, and therefore this stands firmly in its place, and is that immoveable millstone upon which the grinding is made; the
nether

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nether mandible is one single, hard, and strong bone, whose articulation is very loose, for the greater liberty of motion; and it hath two or three pair of muscles, especially the *temporal*, which strongly bring it upward, for the closer acting against the other mandible, and one wonderful pair of muscles, called, the *masseters*, and are derived from a double original, and beyond all others of the body whatsoever, have their several fibres so crossing and interwoven one with another, that they are severally inserted into this lower mandible, and so are able to move it upward; to the right, to the left; forward, backward, and consequently round about, and so performing that action which we call mastication or chewing, and therefore this is that other moveable millstone which makes the grinding.

Now out of both these, equally proceed in the season of them a certain number of small bones which we call the teeth; which howsoever they may be numbered among the bones; yet they have one or two especial properties which are competent to no other bones of the body, (at least in that measure,) whereby they are principally adapted for the grinding.

The first is, they are naked, they have no covering or skin upon them, no not so much as that common membrane, called, the *Periosteum*, which doth encompass all the bones of the body beside; and that is because they might
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the better attinge one another's bodies, and in their attrition one against another they might feel no pain ; but I must needs here take notice that the words of *Job* seem to be against me, where he saith, *I have escaped with the skin of my teeth*, *Job* xix. 20 ; this is easily answered, if we consider the two parts of the teeth, viz. the *basis*, and the *radix* ; *that*, is the part which eminently appears white above the gums ; *this*, is that part which is within the gums, and stands fixed in the mandibles : Now by *Job's* skin or covering of his teeth, it is apparent he meant the gums which cover the roots of the teeth ; his sores, and his boyls were so great and terrible upon him, from the sole of his foot to his crown, that there was no part of the skin of his body to be seen, but only about his teeth, which in all such cutaneous diseases doth for the most part wholly escape.

The second is, they have the vessels which convey life and sense unto them, contained only in the inward parts, that the outward parts may be freer and better to grind.

The third is, that they are growing or encreasing so long as man lives, so that what is worn away of them by their continual attrition and manducation, is daily repaired, otherwise they would grow shorter and smother, and not be so able to perform their work ; and this is a wonderful piece of the wisdom of God in nature, which art cannot possibly reach unto ;
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and therefore because they cannot make their mills grow, as they daily decay by grinding; they are fain to supply that want, by often pecking their mill-stones, and at length changing them; and by those means, as it were, renew their teeth, without which they were able to do nothing at all.

The last I shall mention is, that the teeth, of all the bones of the body are the hardest, and will suffer the least from any other bodies whatsoever, and therefore are the fitter for such a work as this. A mill-stone is of all other stones supposed to be the hardest, and therefore *Job* when he had expressed the hardness of the heart of the Leviathan by a stone; as if he had not said enough, he farther adds one degree more, yea, saith he, *As hard as a piece of the nether mill-stone*. These short observations may suffice to teach us in the general, that the teeth also may be called the grinders. If we yet more particularly consider them, and how they may be divided, we shall have a farther light into this matter. The teeth are of three kinds, either *Incisores*, *Canini*, or *Molares*: The first are the broad fore-teeth; the second are the next round-teeth; which are usually called the eye-teeth; the last are the great double and hindermost teeth; the first, bite or cut the food; the second, break or bruise the food; the last, chew or grind the food. And this distinction also may be found in scripture, the first are alluded to, where it is said, *The*
prophet;

prophets bite with their teeth, Mich. iii. 5. The second, where it is said, *He hath the cheek teeth of a lion*, Joel i. 6. And both these, where it is said, *There is a generation whose teeth are as swords, and their jaw teeth as knives*, Prov. xxx.

14. The last is alluded to, where it is said, *While the flesh was yet between their teeth, ere it was chewed, the wrath of the Lord was kindled against the people*, Numb. xi. 33. They had bit the flesh of the Quails, and had passed it from the first teeth to the last, which are the grinders, and there it stuck till they died. And thus at length we are fallen upon the true, proper, and strict instruments of grinding; we have hitherto been shewing the whole frame of the mill, and how several parts do wonderfully contribute towards this work, and now we are come to those parts, wherein the close pinch of grinding lieth, and that is in the great, broad, and hindermost teeth, which from the day of the writing of this allegory, to this present time, have ever among anatomists retained the name of grinders.

And that not without exceeding good reason, for the form and figure of these, above the rest doth abundantly shew that these are the fittest of them all for this work; for these are bigger, larger, broader every way; especially at the top, where their form is much what like to that of a mill, where also they have eminent asperities, and protuberances, exactly

exactly answerable to the roughness of the millstones; by which the grinding is far more easily and perfectly performed; beside, these are more firmly inclavated, and infixed into the jaw-bones, by treble, or quadruple roots; whereas all the rest are but by single, or double at the most; and being more strongly rooted, they are the fitter for more eminent services. Lastly, and chiefly, the experience of every man doth sufficiently confirm that this is the proper use of these teeth; and that the more solid food which needs greater manducation, cannot be sufficiently comminuated for chyle, or ground low enough for the stomach, until these teeth have done this work upon it. And thus it is plain, that the jaws, and teeth, and eminently these last mentioned, are appositely and elegantly called the grinders; which how much service they do to man while usable, and how much detriment and loss they bring upon him when they cease from their use, is well known to all men. *Strong meat belongeth to men of full age*, Heb. v. 14. saith the author to the *Hebrews*. It belongs to them, and only to them because they alone have, as I may so say, their mill in tune, their mouth full of strong teeth, and set directly one against another, whereby they may bring the strongest meat into a meet consistence, and a due preparation for easy digestion in the stomach. But it may here be said, there are many creatures that are not thus strongly armed, and have not so

many teeth, nor those they have so well set, as your position supposeth they should be, for the due preparation of the meat; and these are the sheep, the goat, the cow, the deer, and all other creatures that have teeth only on the lower jaw, and none at all on the upper.

These have no antagonist grinders, nor contracting millstones, and yet these creatures in their full age, eat as solid food, and as hard of digestion, and withal, do as well with it, as they that are better provided in this respect.

To this I must needs answer, it is very true, so that from hence we may take occasion to admire the wisdom of God in the various formation of several creatures, tending notwithstanding to the use and benefit of them all.

However this in these creatures is a want, and must have stood for a want, had they not been abundantly supplied in another kind. For all those creatures that are thus deficient in their teeth, and only those, are they which chew the cud, which is a re-assuming the food into the mouth, and a grinding of it afresh the second time, so that they are fain to do that at twice, and to be three or four times as long about it, as those creatures whose grinders are better placed; neither would this suffice alone, for if they should be chewing their meat all the day long with the teeth that they have, it would never be sufficiently prepared for nourishment, were their not yet a farther pre-

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paration

paration in their bodies for that purpose ; and that is, that those creatures, and only those, have a peculiar vessel in their bodies assigned for this work, and that is that which anatomists call, *Omasum*, and our butchers, the *Read* ; wherein the meat must be macerated for a certain season, and by the *fermentum* therein contained, brought to such a consistence, that afterwards by a little chewing in the mouth again, it may be committed to the stomach with the same hopes of success, that in other creatures that are toothed on both sides, it is committed at the first : Now, man being in the number of these last mentioned, must for the due preparation of all strong food, trust alone to his grinders ; so that the time of ab-lactation of the child, and of alteration of the diet of the old man, is most certainly indicated by the beginning and ceasing of the use of the teeth ; milk is fit for babes, before their teeth come ; and old men when their teeth decay, are again *become such as have need of milk, and not of strong meat*, Heb. xiii. 14.

Now by the ceasing of the teeth we must understand, all those infirmities that are incident to them by reason of age, whether looseness, hollowness, rottenness, brokenness, blackness, foulness, stench, worm-eatenness, excrescency, or whatsoever else may be any impediment to them in their use. But the chief symptom here intended is, the falling out, and consequently

quently, the paucity of the teeth; which is gathered from the reason here annexed, *Because they are few*; which is very well translated in our language, following the vulgar *Latin*, *Otiſſæ erunt molentes in minuto numero*. For although the original word do primarily ſignify no more than becauſe they are diminifhed, yet it muſt of neceſſity be underſtood in reſpect of their number; for otherwiſe they are not diminifhed, but do grow ſo long as they remain in the head, even to the extremity of old age. But as age comes on, the natural moiſture at the root of the teeth is conſumed, and a preternatural is diſtilled thither in its room, which doth by degrees relax them in their ſockets, and at length quite expel them: And when ſome of them are thruſt out, and but a few left in, it is eaſy to conceive from what hath been ſaid, how the chewing in the mouth ceaſeth; yea, it ceaſeth more, when the teeth are few, than when they are none at all. For then the gums might act one againſt another, and, forasmuch as they grow harder in old age, might do ſomething weakly towards the chewing of the meat; but when they are few, they hinder thoſe from working in the leaſt, and having no antagoniſts (were they firm in the head which they are not) are not able to work themſelves, and ſo the whole grinding ceaſeth; which is a very great and moſt certain ſymptom of this ſtate of weakneſs, and yet

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yet it is neglected by our great master * of natural knowledge in this kind, in his best enumeration of the diseases of age.

And those that look out of the windows be darkened.

That by this clear expression the eyes and the infirmities of them in old age, is intimated unto us, was never yet, and I persuade myself never will be, in the least measure doubted or questioned.

Forasmuch as they are the only true, and proper organs of seeing ; however, it will be well worth our labour to consider, how the eyes may be called, the lookers out of the windows. One may be said to look out of a window in a double sense, either when he looks thro' the glass of the window, and thro' the pellucidity of that most refined body, discerneth those things which are without ; or when he looks thro' the open casement, or thro' some open hole of the window, wherein there is nothing at all interposeth between him and the object. Now in both these senses may our interpretation well be made. For the explication of it in the first sense, we must take notice of all those transparent parts, through which the visible species must of necessity pass before vision can be perfected : for as a man could see nothing thro' a window, were it not made of glass, or of some body alike diaphanous : So neither could he perceive any thing with his eye, were not

* *Hipp. l. 3. Apho. ult.*

the parts thereof, through which passage is made, of the very same nature. Now, the parts of the eye, through whose bodies the visible species must pass that they may be discerned, are either the *humours*, or the *tunics*; the *humours* are three, the *watry*, the *chryſtal-line*, and the *glaffy* humour, ſo called by anatomists; and you may perceive by their names that the substance of them all is diaphanous; all which, howsoever they wonderfully differ among themselves, and ſeveral ways contribute to the use and benefit of the eye, and consequently are made variously instrumental unto vision, yet they all agree in this one thing, that they are transparent; and that they must of necessity do, forasmuch as into their bodies, and thro' their bodies, must the visible species pass, before they can perfectly be discerned by any man. And if one opacous, or darksome body interposeth, they can go no further, but there they must determine their course.

The *tunics* or *coats*, through which the sight is made, are only two; for although there are other tunics of the eye, which conduce wonderfully to the sight, (as you shall hear beneath) yet those through which the species pass, are only the *tunica aranea*, and the *cornea*. The first is so called from the similitude of a spider's web, because it is most fine and subtle, and being derived from the brain and optick nerve, it becomes a most tenuous

vestment for the humours; and is so pellucid, and transparent, that among the learned it bears the name of *speculum*. The other is called, *sclerotica*, or *cornea*; and that is, that hard and horny membrane, which being derived from the *dura mater*, encompasseth the whole body of the eye, without any perforation; and on the back part, behind the sight of the eye, is more obscure and dark; but on the forepart, is far more plain, polite, and diaphanous, that the species may pass thro' its body most pure and unaltered. And now I am come to that part of the eye, that doth most aptly resemble the glass of the window, by reason of which a man may be truly said to look through a window, and an old man, *to see through a glass darkly*, 1 Cor. xiii. 12. without the use of spectacles, which some would fain have here to be understood; of whose opinion I cannot persuade myself to be, because it is uncertain to me, whether those helps of nature were then, and there, in use: And most certain it is, that they are without the compass of the allegory, and are not part of that house or body of man, whose decay is here so lively represented. Beside, this tunicle hath the same use to man, in his perfect state, that spectacles have in his imperfect. And this be confident of, that there is nothing that art hath found out to help man in his decays, that hath not its footsteps first in nature, and is not an imitation of those things in man, that were most com.

completely in him in his perfection. And here I must of necessity go one step farther than our common oculists; who ascribe to this part but a low and a mean office, which is only to keep the humours in their place, or at the best, to defend the inward parts from external injuries; but without all question, it hath this farther, and more noble use, *viz.* so to dispose and order the visible species, that they may in the most convenient manner, make their impression upon the proper organ of sight; and this their crassitude or thickness, together with their convexity or bending outward, doth sufficiently make appear. I here all along retain the term of the ancients, *viz. visible species*, as being most known, and that by which I may be better understood among most, to whom this paraphrase may come, though it be not so proper, and the conceptions which they had about them, are not to be admitted; for there is no new entity, either material, or immaterial, cast off from the object, distinct from it, and from the light, which is the cause of vision in the eye; by the *visible species* therefore, I mean no more than the several beams of light being so reflected from the object, as that they become fully fraught with the representation of it; (not only in respect of the proper objects of sight, which we call colour, but of these common ones also, which we call situation, figure, distance, bigness, and the like) and have a

compleat power of impressing the same upon the *retina*, which is the strict and proper organ of sight, and is nothing else than the dilatation of the optick nerve all about the bottom of the eye. For the better understanding of all which, we must know that the species pass along the medium in a pyramidical figure, and as they are cast off from one point of the superficies of the object in a cone, so they must be reduced again in the same conical figure upon one and the same point of the organ; which reduction is performed by that collection, refraction, and direction, which happeneth to them in those several pellucid bodies through which they pass, and primarily (while the eye remains in its vigour) in the *tunica cornea*; but as age enfeebleth the eye, the form and figure of it becomes more plane and depressed than it was before; and the crystalline humour, which had a power of reducing itself, and consequently the whole body of the eye, to a more oblong and convex shape, becomes dry, and altogether unable for such an end; so that now the species cast off from the object at a convenient distance, cannot be brought to a cone upon the organ, which must needs breed a confusion in the sight: To avoid which confusion, old men hold the object that they look upon at a greater distance from the eye, because so, the present constitution of the eye can better regulate the species; and thus also spectacles

tacles are placed before the eye to collect, re-
fract, and guide the species, that they may
point together upon the *retina*; which by how
much the thicker, and more convex they are,
by so much the more powerfully do they do
this work: And therefore as age encreaseth,
and the form of the crySTALLINE humour and of
the whole eye is more depressed, so much the
thicker, or so much the more convex, or both,
must the spectacles be made, that they may be
answerable to the age. And this done only in
imitation of that, which is far more perfectly
done while man abides in strength, by the hard
membrane we are now treating of; and this is
the first sense in which the eyes may be called
the lookers out of the windows.

The other is, that whereby they may be
said to look *through the holes* of the win-
dow, when there is an open passage, and no-
thing at all interposeth between them and the
object. And this indeed is the most proper
reading of the words. בארבות signifieth in
foraminibus, or as the vulgar *Latin*, *per fora-*
mina; and the seventy, ἐν ταῖς ὀπταῖς. Now
there are several ways, whereby the eye may
be said to look in, or through the holes.

The first is, in respect of their seat, or the
form of that place, in which they are fixed in
the head. And if we should strictly hold the
word to that interpretation of *in foraminibus*,
or the lookers in the holes, nothing could be

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so applicable as this; and hereunto to be sure the *Chaldee* paraphrase hath reference, *Qui vident per cancellos capitis tui*, those that look in, or through the strong bounds of the head, which can be no other, than those firm holes, or arches, which are made in the fore-part of the head, for that very purpose, *viz.* to receive into their cavities the whole body of the eye: And these are by oculists called *orbitæ*, and are each of them compounded of six several bones, which, being most conveniently futurated among themselves, do make up those curious arched chambers in which these lookers or beholders dwell, in which, and from which, they may be aptly said to perform their offices. And to these allusion is had in the plague wherewith the Lord will smite those that fight against *Jerusalem*, *Their flesh shall consume away while they stand upon their feet, and their eyes shall consume away in their holes*, *Zach. xiv. 12.*

Secondly, They may be said to look in, or through the holes; in respect of the *palpebræ* or eye-lids; for although the use of the eye-lids is to cover or close the eyes, so that they are called, *oculi ab oculendo, vel occultando*, because they lie hid under their lids; yet whensoever the eye is exercised in seeing, they must depart one from another, and so leave an open hole through which the sight may be made. And thus every man discerns in himself that he

he can take away sight or cause it a pleasure, by drawing, or withdrawing ; by letting down, or pulling up, these shutters of the windows. And it is wonderful to consider how ready they are in this work, that they might be no impediment to vision ; so that an instantaneous action is no way better expressed, than by the motion of the eye-lids : *Behold I shew you a mystery, we shall not all sleep, but we shall all be changed in a moment, in the twinkling of an eye, 1. Cor. xv. 52.* And when we look earnestly upon any thing, we stedfastly keep the windows open ; and a shut eye, in scripture phrase, signifieth impossibility of seeing ; *Shut their eyes lest they see, Isa. vi. 10.* and an open eye signifieth power of looking or beholding ; *Open the eyes of these men, saith Elisha, that they may see ; and the Lord opened their eyes, and they saw, and behold they were in the midst of Samaria, 2 Kings vi. 20.* And a Seer, and a man whose eyes are opened are the same thing, *Balaam the son of Beor hath said, and the man whose eyes are open hath said, he hath said, who heard the words of God, who saw the vision of the Almighty, falling into a trance, but having his eyes open, Num. xxiv. 3, 4.* And thus also may the eyes be said to look through the holes, and all those that have taken exact notice of the *foramina cutis* in the body of man, have been sure not to neglect these.

Thirdly,

Thirdly, They may be said to look through the holes, in respect of that outward membrane of the eye, which is called *adnata*, or *conjunctiva*; and this is that which being divided from the *pericranium*, is next of all to the *orbita*, and firmly holdeth the eye in that cavity; it encompasseth the eye round on the back-part, and on the fore-part so far as the white of the eye goeth, and no further, and so leaveth the whole *iris*, the rainbow, or party-coloured part of the eye, as an open hole, which the visible species may freely without interruption pass through; the truth of this any one may discern in the inflammation of the eyes, for that is a disease for the most part seated in this part alone; then you may see the veins and the arteries very red and swollen, so far as this membrane or the white of the eye reacheth, and the *iris* or darker part of the eye in the meanwhile wholly free.

Fourthly, The eyes may be said to look through the holes in respect of the *pupilla*, or the apple of the eye, which is nothing else but an open hole in one of the coverings of the eye, as I may say, bored for that very purpose, that the lookers thro' the windows might have an open view; for that covering which is called *tunica uvea*, is a thick and a close, a dusky and a dark membrane, thro' which the visible species, or the light cannot easily make its way. And therefore on the back-part its use is to preserve, and to

to keep together the innate light of the eye, and also to give a stop to the visible species, so that they can pass no farther, but must there impress their images like the lead, or the steel, or whatsoever else is put on the back-side of the looking-glass, without which there can be no impression made; but on the fore-part it is most conveniently perforated, and at such a proportion, that the light or the species through it have freedom of access: which perforation is the apple of the eye, that wonderful part, which is so often noted in scripture (*Gen. xxxii. 10. Psal. xvii. 8. Prov. vii. 2.*) to be above all other parts of the body tendered and observed, and therefore here I would principally take notice of it; and of all the parts of the eyes, and of all the holes thro' which they look, let this be always accounted the most observable. For it may be dilated, or contracted, as it may be conducive to a more perfect sight; if there be requisite thereunto, a greater or a lesser light; if the object we would look upon, be farther off, or nearer to the eye; or if we do more carelessly or curiously look upon it; this hole is presently made wider or narrower, that it may be the more serviceable for the present occasion.

Lastly, They may be said to look thro' the holes in respect of the *optick nerves*, for these above all the other nerves of the body are apparently perforated; and although neither

ther these, nor any other, do so appear in a body that hath been long dead, yet doubtless they have open passages while the body is yet alive, for as much as they are the conveyers of matter, though more pure and refined, from one part unto another, as the other channels of the body are. And here the cavity and porosity of the optick nerves ought as well to be reckoned among the holes through which sight is made, as any other that are placed before the proper organ upon which the representation of outward objects is first made, and that because there can be no perfect perception of any thing, unless the impression made; upon the sensory be truly conveyed into the most inward recesses of the brain, where the soul makes its seat of judicature. For as all the things in a chamber may have their firm representation in a glass that stands upon the table, yet if any thing interpose between me and the glass, I discern nothing at all; and they are all as much hid from me, as if they had never been there represented. And thus we know a total obstruction of the optick nerve, which is called *gutta serena*, makes as perfect a blindness, as an obstruction of the humour *aqueus*, which is called a *cataract*. And thus I have endeavoured to shew, and that I hope with some satisfaction, how the eyes may be called, the lookers thro' the windows. Now age comes on and encreaseth, it is well known to all men how sight
goeth

goeth away and decreaseth; the lookers out of the windows must assuredly be darkened, and by how much the more excellent these parts are, by so much the more apparent are their decays. It is said of the heart, it is *primum vivens*, and *ultimum moriens*; but contrariwise it may very well be said of the eye, that it is *ultimum vivens*, and *primum moriens*. This most wonderful and tender part of man, in that it hath more curious and more various work in its formation, is the last that lives; and in that it hath need of more life and vigour, more firmness and purity in its operation, it is the first that dieth; and indeed the insensible encroachment of age, is no where so soon discovered, as in the eye; and men are loth to think themselves declining in age so soon as the eye gives warning thereof; and we have scarce any description of an old man by his infirmities, wherein those of the eye are not principally mentioned: When *Isaac*, *Jacob*, *Eli*, and others are recorded as old, it is said of them, *Their eyes were dim and they could not see*, Gen. xxvii. 1.—xlviii. 10. 1 Sam. iii. 2. for whatsoever may either inactivate the diaphanous bodies before mentioned, and render them less transparent; or stop the several perforations, and so hinder that open view: must of necessity cause a diminution, and in time a perfect abolition of the sight; and here give me leave to name one or two principal symptoms of vision

fion that are the chief attendants of this declining state; the first is *caligo*, which is the obscurity of vision by reason of the crassitude or thickness of the *tunica cornea* *; which by reason of the driness of age doth together with the nails of the fingers, grow darker and thicker, and consequently lose daily somewhat of its perspicuity: Another is *glaucoma*, which is the change of the colour of the crystalline humour, by reason of its dulness and thickness, whereby old men do look upon all things as it were through smoak, or a cloud, and so do but darkly discern them: Another is *zinifsis*, which is a change of the figure of the whole eye, whereby it becomes more plain and depressed, and a driness in the crystalline humour, whereby it is unable to reduce the eye to that form, which may be most advantageous to vision; so that they cannot perceive any thing at an equal distance, but must have their objects more remote from the eye, or the species first refracted and directed by the use of spectacles: Another is *suffusio ex cruditate*, or any interposition of any preternatural matter between the sight and the *tunica cornea*: I might also add *corrugatio & relaxatio uveæ tunicæ*, the contraction or dilatation of the apple of the eye; or whatsoever else by obscuring the glass, or obstructing the holes, may be justly said to darken the lookers out of the windows.

VERSE

* Fernel.

VERSE 4.

And the doors shall be shut in the streets, when the sound of the grinding is low, and he shall rise up at the voice of the bird, and all the daughters of musick shall be brought low.

THUS far the preacher hath been treating of all those faculties which are termed *animal*, and their decays in the time of age; he passeth in this verse to those other which are called *natural*, of which he treateth in the beginning of this verse, and then to those that are mixed, in the latter end; and that in a double respect, first, those that are mixed of the faculties, inward and outward, and that is expressed in the want of sleep, in those words, *He shall rise up at the voice of the bird*; forasmuch as sleep,* if perfect and sound, is the ligation of all the senses both inward and outward for the refreshment both of the mind and body. The other mixture of faculties is of vital and animal, in the last words, *All the daughters of musick shall be brought low*; for the passive daughters of musick belong to the animal faculty, being the instruments of an outward sense, *viz.* hearing: And the active daughters of musick belong to the vital, being the instruments of respiration, as you shall hear hereafter. Now to the understanding of this verse, especially the former part of it, I hope to

* Fernel. l. vi. Pathol. c. 11.

to let in some glimmering of light, which formerly hath lain undiscovered.

The doors be shut in the streets, when the sound of the grinding is low.

For the right understanding of these words, we must be sure in the first place to take notice that all these words are but one sentence, and consequently but one clause of the description of age; the former words, *viz. The doors shall be shut in the streets*, are not a distinct symptom of themselves, as most men have formerly said, but they have their reference to the ensuing words, *viz. When the voice of the grinding is low*. And the doors and streets here mentioned, are no other, than such as concern the grinding, and are as inlets and outlets, ways and passages unto that. And I persuade myself, that the hitherto miscarriage in the interpretation of these words hath proceeded from neglect of this consideration. The doors shall be shut when the grinding is low, and only then; and the lowness of the grinding, is the cause of the shutting of the doors. *In humilitate vocis molentis*, saith the Vulgar Latin. *Ob, per, vel propter depressionem vocis molentis*, say others; and that very consonant to the original, inasmuch as the grinding shall be low, or by reason of the lowness of the grinding, the doors shall be shut in the streets. Wherefore for the better clearing of the whole sentence, we must first of all shew what

what is to be understood by the grinding; and afterwards what the doors and the streets are, and what the sound of the grinding, will easily be made appear. The wisdom of *Solomon* is so famous throughout all regions and ages, that I need not here apologize for it. It would be unbecoming an ordinary writer, much more the penman of this allegory, to deliver the same thing twice in a breath; and I wonder with what face any interpreters could put so great an absurdity upon the wise man, as to make this grinding signify no more than that just mentioned before. But for the clearing of this, we must know that grinding is of two sorts, either *Per extra positionem*, or *Per intra susceptionem*, (as philosophers use to distinguish of augmentation,) there is an *extrinsecal*, or an *intrinsecal* grinding; the former of these is performed when two hard bodies, acting against each other, do break and bruise into small parts that which is put between them. And this is the grinding as in a mill, of which you heard before. The latter of these is performed, when the parts of the same mass, by reason of the exaltation of some internal principle, or the addition of some *fermentum*, are so acted among themselves, that the whole mass, and every the least part thereof, is changed and brought into a new consistence. And this, philosophy calls *fermentation*, and is that of which the wise man speaks in this place; and it is therefore called grinding, because

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cause it accomplisheth the end thereof better than any mill can do. It will comminuate things of so hard a substance that no mill can break. I would fain know what mill could have ground *Aaron's* golden calf? but by the help of fire, and possibly some specific menstruum, as a proper key for that solar mineral, it was easily ground to powder, *Exod.* xxxii. 20, *Deut.* ix. 21. Again, it can divide the matter that is to be ground into smaller parts than any mill can do; it will not leave the most minute part unsearched, *A little leaven*, saith the scripture, *leaveneth the whole lump*, 1 Cor. v. 6, Gal. v. 9. And our Saviour's expression of it, is yet more significant, *The Kingdom of heaven is like unto leaven, which a woman took and hid in three measures of meal till the whole was leavened*, Mat. xiii. 33, ἕως ἃ ἐζυμώθη ὅλον, till the whole of the mass, and every one of the least parts thereof be leavened. No mill can be set so low, as to grind every corn, and every part of every corn; but leaven leaves none untouched, but divides (beyond what Philosophy gives way for) into parts indivisible.

Now of this sort of grinding there is very much to be found in the body of man: And indeed all the natural alterations that tend either to the preservation of the person, or propagation of the kind, are the products of this intestine grinding. And there is scarce a part in man, especially an internal *viscus*, that doth not particularly

ticularly contribute to such a work as this. And surely, that which lies daily upon our trenchers, had need of many thorough grindings, that it may be really transubstantiated into our flesh; these in the body of man are by physicians called digestions, or concoctions, and are to be found almost in every part, as was said before; but I shall instance only in a few, and those well known to all those that have the least skill in natural things; and these few grindings, together with the voice of them, the doors and streets that lead to and from them, being well understood; those that are more accurate in the knowledge of all the alterations of the nourishment of man, may thence-from easily attain the whole intent and purpose of the wise man in this part of the description of age. I shall only mention five: Three in respect of the individual; and two in respect of the species; and they are those common ones; *chylicification*, *sanguification*, *assimilation*, *lactification*, and *spermification*.

The first of these, *viz.* *chylicification* is thus performed; after the meat is sufficiently chewed in the mouth, it is committed to the stomach, where continually there lieth treasured up a certain acid juice, the relicts of the last concoction; which (as the leaven in the bread) doth presently infect the whole mass, and every part thereof; and doth so penetrate and search the parts, and so divide and separate them one
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from another, and join itself to every one of them, that at last the matter of nourishment is so perfectly ground, that it is brought to a new consistence and colour, very like to the cream of barley, and is that physicians call the *chyle*; and is the first intrinsical grinding that the food receiveth, and is next of all to that of the mouth, and not altogether unlike to it; and therefore when mastication is but weakly performed, you heard before that it was helped by infusion of the food in a ventricle prepared for that purpose, whereby the parts were acted among themselves, and better comminuated, than if they had been never so long chewed in the mouth.

The second of these, *viz. sanguification* is performed, when the *chyle* itself is ground over again, and receiving yet farther exaltations by a greater solution of the more noble, and active principles; it once again deposites its old colour, and consistence, and so at length becomes perfectly changed into that true liquor of life, which is called *blood*, Lev. xvii. 13, 14. and although it must always be acknowledged that the *chyle* doth receive many alterations, and exaltations before it come to the heart, almost in every part it passeth thro', both in the guts themselves, in the mesentery, the glandules, and the milky vessels, both of one sort, and of another; and also in the veins; and after it hath passed through the heart, it must be
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once or twice circulated through the body, and receive several defecations, as in the liver, the spleen, the kidneys, and the like; before it be compleatly accomplished for its ultimate use, all which exaltations, and defecations, are included in this text; yet it must still be remembered, that the principal and supream exaltation of the blood, the most eminent and remarkable grinding towards sanguification, in comparison of which, all the others are little to be accounted of, is always performed in the *heart*, that fountain of life; for as soon as the *vena cava* hath committed the matter of nourishment into the right ventricle of the heart, the *fermentum* therein contained working suddenly and thoroughly upon it, sets the active principles at a greater freedom, and so inducing new motion, and effervescence into the blood, doth happily impregnate it with vitality. And not only this new matter of nutrition, when it first attingeth, the heart is thereby enlivened; but the best blood itself, after that by various circulations, and imparting its power and life to the parts that are nourished by it, it becomes weak and much depauperated; is fain to return back again to the heart for a fresh impregnation. And such a vast difference there is between the blood in the arteries newly brisked in the fountain, and that in the veins lowered and impoverished with its journey, that the ancients took them
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for two several things, and knew not that they were the same; like the men of *Bethlehem*, who knew not *Naomi*, *Ruth* i. 19, 20, 21. nor would acknowledge her the same person, because she went out full, and returned home again empty; and she herself was not unwilling to have changed her name: And he that shall call the rich blood going out in the arteries, *aerial, jovial, spiritual*; and the mean and poor blood returning home in the veins, *earthly, saturnal, gross*, shall make no schism at all in the unquestionable doctrine of circulation.

The third of these, *viz. assimilation*, is then performed, when the nutritive juice is sufficiently prepared in all things that are allotted to it, and by the impulse of the conveying vessels is brought near to the parts that are to be nourished, and then every one of the parts by a certain allecive property of its own, doth draw that which is most agreeable to itself, and then falls to acting, searching, breaking it over again into most minute parts; and so those that are like to prove unconformable, are excommunicated to the pores; and the other are taken into joint fellowship and communion, and so made one with the part; and that which is most remarkable is, that *according to the time of life*, *Gen. xviii. 10.* wherein augmentation or encrease of stature is appointed to man, every one of the parts takes so much to itself as will answer its daily growth, and after that

is accomplished, every part takes only so much to itself, as doth answer its daily decay. *The children of Israel gathered manna in the wilderness, some more, some less, yet when they did mete it in an omer, he that gathered much, had nothing over; and he that gathered little, had no lack; they gathered every man according to his eating, Exod. xvi. 17, 18.* This is truly verified in the food of all mankind. Some there be that make greater preparations for the belly, other some there be that make lesser, yet when this comes to the measure of God, I mean, to be put to that end which he hath appointed, he that made the greatest hath nothing over, and he that made the least hath no lack, every one according to his wasting. The princes superfluities, and the beggars penury, both of them make but equal reparation for the daily consumption of their own flesh.

The fourth that I mentioned, was the *making of the milk*; which although it be peculiar to one sex only, yet I cannot but take notice of it among the rest, because a principal alteration of the nutritive juice is thereby made, and the wisdom and goodness of God is therein (as in the formation and birth of the infant) most eminently made appear. *Thou art he (saith David) that took me out of the womb, thou didst make me hope when I was upon my mother's breasts, Psal. xxii. 9.* Now, this is thus performed: The breasts by their attractive property, draw

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from the arteries that blood, which is the least altered from chyle, as being most agreeable to their glandulous substance; and from the nerves, that juice which they convey for the nourishment of the spermatick parts, and by a specifick *fermentum* in themselves contained, do subact, and comminuate, both these liquors, and by a perfect mixture of them, and a certain peculiar alteration, at length produce that white, sweet, pleasant, alimentary liquor which we call the *milk*, which containeth in it meet matter of nourishment for all the parts of the child, both *sanguineous*, and *spermatical*: and is the most proper food for it, and exactly agreeable to that, with which it was sustained in the womb.

The last of these we have named is, the *production of seed*, which because it is the highest, and most wonderful of them all, it had need of greater preparations, and more alterations than all the rest; and therefore it is, that there are several vessels appointed for that purpose, and many admirable combinations, complications, and intertextures of them all, which are not elsewhere in the body to be found. The *vasa præparantia*, and *deferentia*, the *vas varicosum*, the *epididymis*, and *parastatæ*, the *vesiculæ seminales* also, and the *prostatæ*, do each of them add somewhat to the making of the seed meet for propagation; but it must always be acknowledged that the principal *fermentum* that doth

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most of all exalt the seminary matter, and chiefly render it prolifick, is contained in the soft, spongy, glandulous substance of the *testes*; which therefore bear their name, because they give testimony of virility, and shew that a man is perfect in his kind, and therefore able to produce his own image, *Gen. v. 3.* the spirituous and benign matter most apt for generation, being from all the parts of the body by the arteries and nerves conveyed to these parts; it is herein, by a mysterious faculty of their own, elaborated into that noble *elixir*; which from one man hath dilated the world to so many millions as of which it now consists; and doth continually from generation to generation make abundant reparation for the cruelties of the King of Terrors. For although in the space of an hundred years or thereabout, all the living upon the face of the earth are driven thencefrom by the stroke of death, yet by the vertue of this divine extract, the earth is at all times sufficiently peopled, and the inhabitants thereof perceive no lack. So that this doth in a manner perpetuate mortality, and cause men to survive the funerals of all mankind. Hence it is that the wisdom of God in scripture doth always exprefs posterity, and the generations that were yet to come, by the word *seed*, *I will put enmity between thee and the woman, between thy seed and her seed, Gen. iii. 15.* And the Lord said to Abraham, *Look now to-*

wards heaven, and tell the stars if thou be able to number them, so shall thy seed be, Gen. xv. 5.

And this is the last operation in man which I shall mention that is here intended by the word grinding; and this, *viz.* the preparation of seed (if not all the other) is eminently called grinding, in that place where it is said, *Let my wife also grind to another, and let others bow down upon her*, Job xxxi. 10. and all the other alterations of the nutritive juice in man (if not this also) are eminently so called, in the story of *Samson*; for although it be generally understood that *Samson* ground in a mill, and our later commentators (as if in a mill themselves) following the beaten tract, do all take it up from others, and leave it unto others as granted: yet in the text there is not once mention made of a mill, but there are many circumstances that do to me clearly evince the contrary; the words run thus, *The philistines took him, and put out his eyes, and brought him down to Gaza, and bound him with fetters of brass, and he did grind in the prison house*, Judges xvi. 21. Wherein it is very observable, that it is not said, they made him grind, or they forced him to grind, but he did grind in the prison house: And it is so much the more observable, because all the injuries done to him before named, are expressed by a force put upon him; they took him, they put out his eyes, they brought him down to *Gaza*, they bound him with fetters; and if this last, had

had been a like injury and force unto him, it had been more congruous to have continued the same manner of expreffion, and to have faid, *They made him grind*; but the violence is here left out, and his grinding made his own doing, *He did grind in the prifon houfe*. Befide thofe manicles put upon him were exceedingly inconvenient for a grinder in a mill: And it is moft improbable, that for that fmall advantage or pleafure that fhould accrue to them by his grinding in a mill, that they fhould at any time take off his fetters, fince they had had fo many, and fo fad experiences of his unparalleled ftrength. And if at any time they fhould loofe him, then fure was the leaft danger, when the lords of the Philiftines, and three thouland of the people were gathered together to fee him make fport; yet at that time he was kept (by his chains doubtlefs) at the difpofure of a lad; *For Samfon faid to the lad that held him by the hand, fuffer me that I may feel the pillars whereon the houfe ftandeth, that I may lean upon them*, ver. 26. Moreover, the ancient rabbies give us an interpretation upon this place, which is not altogether improbable, and which is confirmed unto us by *Hieron* in his commentary upon the fecond verfe of the forty-feventh chapter of *Ifaiah*, and that is, that this people being very defirous of giants, and boasting much in their ftrength (as is well known by fabled ftory) brought of their choicelt, and luftieft women

to him in the prison, that from this mighty destroyer of their country, they might have a gigantick race for its preservation : However in the main, I persuade myself, his grinding was nothing else, but performing the offices of nature, his eating, and drinking, and being nourished there ; his turning his food into chyle, his chyle into blood, his blood into flesh, and other the like natural operations, which is the true meaning of the word grinding in this place.

We now proceed to *the sound of the grinding*, which is nothing else but that, by which the grinding is known, some natural symptom significative of digestion ; and all those indications that do demonstrate that the works of nature proceed aright, and according to their primitive institution (whether it be the appetite of the parts, their action or excretion of their excrements, those subservient faculties which usually are called *attraction, retention, expulsion*, or whatsoever else may manifest concoction) may truly and properly be called the voice of the grinding. I shall instance in a few, whereby the rest may be easily discerned, and therein I shall observe my former method, having reference only to those five great works of nature before treated of. The voice of the first grinding, is the natural appetite of the stomach to meat and drink, and is usually called hunger and thirst ; the strength and power of the
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stomach to retain its food ; and the seasonable evacuation of well concocted excrements. The voice of the second, is a free passage of the chyle without obstruction ; a quick, strong, and a lively pulse ; a due separation of gall, of urine, and the rest of the excrements of this concoction. The voice of the third, is the proper tone of all the parts of the body ; the fastness and fulness of the flesh ; and convenient perspiration. The voice of the fourth, *Gen.* xxxi. 3. is the custom of women ; the stiffness, lively colour, and freshness of the nipples ; the smoothness, fairness, elevation, and towering of the breasts, as it is called in scripture, *Her breasts are as towers*, Cant. viii. 10. The voice of the last, is appetite, aptness, and ability for copulation ; inflation, and turgescency of the seminary vessels both *preparatory*, and *ejaculatory*, commonly called *fratration* ; a right temperament of the parts appointed for propagation, strength, vigour, and liveliness of the whole body beside. These, and the like excellencies of nature are the voice of the several grindings while they remain in power ; but as age enfeebleth a man, the grindings are weaker, and the several voices of them more submiss ; wherefore it doth necessarily follow, that in decrepit age, all the before mentioned indicators of strength and perfect concoction must be depraved, diminished, or abolished ; which is the lowness of the sound

of the grinding, and doth include the weakness of the natural faculties in man which stand in direct opposition to those excellent voices before treated of, and such are these that follow: *dejectus appetitus, imbecillitas stomachi, fæces alvi indebitæ: obstructions omnes, pulsus debilis, rarus, tardus; mala sanguinis defæcatio quo ad serum, bilem, &c. tonus partium vitiatus, carnis ariditas, indebita perspiratio: cessatio mensium, papillarum pendentia & lividitas, mammarum flacciditas & rugositas: impotentia & inappetentia concubitus, vasorum spermaticorum imbecillitas & vèxperis, testium & partium propagationi dicatarum cachexia & refrigeratio, totius corporis languor & marcescentia, Rom. iv. 19.* These are the decays of a man intended in this part of the allegory.

Now the grinding and the voice thereof being thus far explained, I question not but the doors and streets, that relate thereunto, are by this time understood; but because the word *doors* hath some peculiarity in it, I cannot but take more notice of it: דלתות this word being of the dual number, signifieth properly the two doors, or both the doors, or the double doors. And although I know no authority for the translating of it into *Latin*, otherwise than *fores*, or *ostia*; yet I submit it to the learned to consider, whether the word *valvæ* or *valvule* will not as well, if not better, agree to the text; the folding doors, or the doors that clap together.

together, or that have a double use. For the better understanding it, therefore, we must know that the doors that relate to the grinding before spoken of, are of two sorts; either the *extreme doors*, or the *intermediate doors*. Again, the extreme doors also, are of two sorts; either the *fore doors*, or the *back doors*; either the doors that first let in the matter of nourishment for the body, that it may therein be ground for its use; or the doors that last let out the reliſts of the grindings, or that matter that upon the ſeveral grindings becomes altogether uſeleſs. The fore doors, or the doors by which the food is firſt let into the body, are none other than the lips, for by the ſhutting of them, the meat is kept out, and by the opening of them, it is let in, to the firſt grinding in the mouth. And as they are called doors in reſpect of words, forasmuch as they let them out; *Keep the door of my lips*, ſaith David, Pſal. xli. 3. And again, *Keep the doors of thy mouth from her that lieth in thy boſom*, Mic. vii. 5. So they may as aptly be called doors in reſpect of the meat; for they let that in.

And hence it is, that the orbicular muſcles, which make the ſubſtance of the lips, (being therefore called the *calves of the lips*, Hoſ. xiv. 2.) and have the power of the keys to ſhut and open them, are called *oris pylori*, the explication of which word (as being very conducive to what we are now about) you have hereafter.

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And therefore those former interpreters that have applied these words to the lips, have done exceeding well; the report they have given hath been true; yet I may, with the queen of *Shaba*, farther add, *Behold the half hath not been told us, the wisdom of Solomon exceeding the same which we have heard*, 1 Kings x. 6, 7. For beside these fore doors, there are other extreme doors also, *viz.* the back doors, which serve only for the carrying out of the excrements. And although the ears, the nostrils, and the eyes, and all the *emunctories* of the body may be here included, yet those which are principally intended, are those eminent posterns, which so long as a man lives in strength are always ready for their work, which is to give passage to those three several excrements which we daily avoid, either by the guts, the bladder, or the habit of the body; and therefore these doors are, *sphincteres ani*, & *vesicae*, & *pari cutis*: For all these have a power of opening and shutting, and consequently of keeping in, or letting out whatsoever comes unto them, and are often at convenient seasons retracted for the cleansing of the body. Thus far of the extreme doors, which are placed at the extremity of the body, and serve only for inlets or outlets to the surface of the body, for all that which is either desired or rejected of nature. The intermediate doors are seated within the body, and are inlets and outlets only from one part of the body to another; like the doors within the house, which according

ing to their shutting or opening are stops or passages from one room of the house to another. These may be said to be double doors, because they relate to two parts, to that which is before, and to that which is behind ; they let out of that, and into this ; and of this sort there are very many in the body of man, and some, I persuade myself, that are not yet sufficiently discovered. The first that the matter of nourishment meets with after it is chewed in the mouth, is the *pharynx*, or head of the *œsophagus*, which, while it is kept close, keeps the meat in the mouth, till it be there sufficiently ground ; and afterward by the retraction of the muscle of the throat, which for this very reason is called *sphincter gulæ*, it is committed into the throat, which is the high way to the stomach ; but before it can come there, it meets again with another door, which is called the mouth, or *superior orifice of the stomach*, which unless it be opened also, it cannot pass. And this any man may perceive in himself in a morning, or after the mouth of the stomach hath been long and close shut, if he hastily swallow down solid food before he drink, it makes a stop there, and stands knocking as it were, with pain waiting for admittance. The third door that the chyle meets withal, is the passage out of the stomach into the guts, and this is the *inferior orifice of the stomach* ; which is so wonderfully framed, that it gives easy admittance for the
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chyle from the stomach to the guts, but back again from them to this, very difficult, or none at all; and it hath a power of dilating or contracting itself, making way, or stopping it, according as the necessity of nature requireth; from whence it is by anatomists called *pylorus*, which is a *Greek* word, as most of the anatomical terms are, and is derived from *πύλη*, *porta*, and *ῥέω*, *curam gero*: and is as much as *Janitor*, the porter or door-keeper; and it doth faithfully, according to the dictates of nature, shut or open that passage unto which it appertains. Besides these three, there are many others which I shall only generally name; the *capillaries* of all the containing vessels in the body, the several stops of all the veins and arteries, which are called *valvulae*, especially those eminent ones about the heart, of which more hereafter, the porosity of all the inward parts of the body, the *valvula coli*, the *annulus fibrosus* of the bladder of gall, the several heads of the *ureters*, their wonderful insertion into the bladder, these, and whatsoever else in the body of man can by their constriction stop that which comes unto them, and by their dilatation give it convenient passage, are in this place called, *the doors of the streets*.

The streets are those open ways and passages in the body of man, which the matter of nourishment passeth along without lett or molestation. *Thou shalt make thy self streets in*
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Damascus, saith *Benbadad* to *Ahab*, 1 Kings xx. 34. that is, thou shalt pass through *Damascus* at thy pleasure, without interruption; there shall always be a broad and an open way. *Platea dicitur à πλάτυς, latus*; and in this place is, as much as, *latitudo foranea patens & aperta*. And of such there are divers found in our body; the *œsophagus*, or gullet, the six several intestines or guts, as usually they are divided by anatomists; the milky vessels of one sort and of another; all the veins and arteries; the nerves and lymphæducts; the *ductus cholidochi, pancreaticus, salivaris*; the *vasa præparantia & deferentia, tubuli lactiferi*; the *ureters* & the *urethra*, in a word, all the *communes ductus*, or open passages which are by nature appointed for the conveyance either of the aliment or excrements, are the streets here intended; forasmuch as they have reference to the grinding before mentioned, and are the common roads or highways to, and from, the places where the grinding is performed.

What remains now, but only that I briefly name unto you those symptoms of age which are signified unto us by this clause, *The doors shall be shut in the streets*. What the doors are you have abundantly heard, the shutting of them is nothing else but their ceasing from their use, or their not being exercised to that end unto which by nature they are appointed; when by reason of the extremity of age the voice

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of the grindings is very low, then shall the doors, all the doors, both the doors, the doors of both kinds, the double doors, shall be shut in the streets; they shall all have lost their opening faculty, so that they shall neither let in, nor let pass, nor let out, what they ought to do, as they formerly did, so long as the strength of man remained, and the voice of the grinding was high. *Occlusio labiorum contra cibum; obserratio pbaryngis, utriusque orificii ventriculi; deglutiendi difficultas, impotentia reserandi in omnibus, arteriarum & venarum, imo omnium internarum partium ostiis, & valvulis; pororum constriction; dysuria, stranguria, ischuria; alvi adstrictio, seu potius pigra tardaue depositio.* These and the like symptoms that arise from the inability of those parts that have in themselves a power of opening and shutting for the benefit of the body, are hereby indicated unto us. And thus far of the natural faculty of man, both in reference to the preservation of the individual, and the propagation of the species; from which short observations they that are better skilled in the hidden mystery of the frame of man's body, and know all the wonderful alterations that are therein made, may easily attain the knowledge of the full scope and intention of the wise man in this place.

He shall rise up at the voice of the bird.

This expression being in itself easier than the rest, and having been well understood by most that have considered this allegory, I shall not much insist upon it, I shall only tell you, that it is to be understood of those infirmities of age, whereby men are altogether unable to take that content and quietness, that sleep and nocturnal repose, which formerly they had used to be refreshed with; there are that earnestly contend to have the latter part translated, *ad vocem passeris*; others would have it, *ad gallicantum*; others are content with, *ad vocem volucris*. For my own part I think it not worth the dispute what this bird is in particular: The general word pleaseth me best, and the original word, *omnem significat avem mane surgentem ad garriendum*; For the radix is רָבַח and hath two eminent significations, one is, *alas habere sive evolare*; and the other, *maturare sive mane surgere*; and that which elsewhere is translated the *early morning*, Ezek. vii. 10. is from the same root with this word in the text, so that if we say, the early bird, or the bird that is warbling its accustomed note betime in the morning (without descending to particulars) we shall take in the whole latitude of the signification of the word, and the full scope of this part of the description of age; which is nothing else but to
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shew how restless, and wakeful men are in their old age ; so that that which is said of the abundance of the rich man, may as truly be said of the infirmity of the old man, *it will not suffer him to sleep*, Eccl. v. 12. In the night time possibly he may have some unquiet drowings, but when the morning approacheth, that time wherein man, in his perfect state, taketh the greatest refreshment, and the soundest sleep ; then shall he be broad awake, and rising up ; *He shall rise up at the voice of the bird* ; that is, at that time when they utter their voices ; not (as some have interpreted it) *causâ vocis aviculæ*, by reason of the voice of any bird, as the crowing of the cock, or the like, as if the voices of them should wake them from their sleep ; for it is not said, he shall *wake* at the voice of the bird, but he shall *rise* at the voice of the bird, presupposing his being awake long before, it may be all the night : Beside the ensuing words, as you shall immediately hear, do demonstrate the deafness of old men, and therefore it is not to be thought that they should easily be startled, as it were, and awaked at the voice of any bird ; therefore it must of necessity be understood, as it is elsewhere phrased, *At the time when the singing of the birds is come*, Cant. ii. 12. Now the time of the singing of the birds may be said to come *annually*, or *diurnally*. The yearly coming of the singing of the birds is in

the spring of the year; to which allusion is had in that place of *Solomon's Song*: And the daily coming of the singing of the birds is in the spring of the day, or very early in the morning; by which time the decrepit old man is very weary of his bed, having in it neither ease, nor sleep. The singing of the birds, and the sighing of old men, are early contemporaries: These are as soon weary of their lodgings, through the pains and wakefulness, that hath attended them in the night season; as they are lifting up their pleasant notes, after their refreshment. Anxiety and trouble of mind, was so grievous to *Ahasuerus*, that it is said, *On that night could not the king sleep*, Hest. vi. 1. Upon the same occasion it is said concerning *Darius*, *His sleep went from him*, Dan. vi. 18. Pains and diseases of the body, were so troublesome to *Job*, that he complains, *When I lie down I say, when shall I arise, and the night be gone, and I am full of tossings to and fro, until the dawning of the day*, Job vii. 4. both these joined together in Age, together with that which is worse, namely, the natural dryness of the brain, and a consumption of those benign vapours that overcome it in sleep; must needs produce the like, or more uncomfortable effects. So that the symptoms hereby indicated unto us are, *anxietates animi, inquietudines nocturnæ, & dolores corporis*; and principally the product of them both, which is *vigilia*.

I should thus pass hence-from, were there not a grand objection lying hid in the body of this discourse, which upon this occasion doth more apparently discover its face. It may be here said, are there not some contrarieties in this description of age, or at least in this interpretation of it? Are there not some inconsistent symptoms reckoned up, to make this miserable state yet far worse than it is? Were not *carus* and *apoplexia*, diseases of over-much sleep, in the exposition of the second verse numbred among the symptoms of age: How therefore comes it to pass that *vigiliæ*, or over-much wakefulness, can be an attendant upon the same condition?

To this I must answer, Were this our fault, it were not ours alone; for so clear is the case, and the truth of it by daily experience so apparent, that whosoever hath at any time treated of the diseases of age hath constantly enumerated them both, as being not the least inconsistent one with another; and that is, because they are not of the same kind; *necesse est ut opposita sint sub eodem genere* *. Now sleep, and the abstinence from it, may each of them be considered either *in genere naturali*, or *in genere præternaturali*; there is a natural, there is a diseased or preternatural sleep. And between these there is a vast difference. *Natural!*

* *Hippo.* l. 3. *Apho.* ult. *Galen* l. 3. c. 6. de *sanitate tuenda.* *Ranchin.* De morborum senum ditiis.

tural sleep is a wooing of the body and mind to quietness, whereby the benign vapours, by their amicable embraces of the brain, get power of it, for its refreshment: *Preternatural sleep* is a committing a rape upon the body and mind, whereby the offensive superfluities, by their violent assaults, force the brain to a benumbedness for its destruction; the same diametrical difference there is between natural and preternatural wakefulness. *Natural waking* is when the brain, by its own vigour and strength, doth, *Samson* like, arise and shake itself, *Judg.* xvi. 20. casting off all those exhalations which, having spent their vertue for the refreshment of the body, are become altogether useles; so that hence-from all the spirits of a man are enlivened, *As a bridegroom coming out of his chamber, and rejoicing as a strong man to run a race,* *Pf.* xix. 5. but when the race is run, and the spirits are thereby tired, there is need of a recruit by sleep. So then, when there is in the nature of man a paucity of those pleasant vapours, and an ineptitude in the brain to receive those few that are, there must needs follow natural watching or wakefulness. *Preternatural waking* and watching, on the contrary, are, when there is an external force put upon the brain, either to raise it from sleep, or to keep it so. Now, to apply this distinction, we must know that sleep and the want thereof are directly contrary one to another, supposed always they be

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in the same kind. Preternatural sleep, and preternatural watching, are altogether inconsistent; and therefore an *apoplexy*, and a *frenzy*, are in no wise incident to the same person at the same time: So also natural sleep and natural watching are inconsistent one with another, and not competible to the same age; but are to be found in man at as great a distance as his life will give way for; *Senibus naturale est vigilare, pueris dormire*; but when they are one of one kind, and another of another, namely, preternatural sleep, and natural watching, they may both of them without any incongruity at all, be reckoned up as the symptoms of old age.

I make the more of this distinction, (though very common and ordinary) and so I would have others do too, because of its universal use upon this occasion; for not only here, but in most of the other descriptions of age, it hath its place for the decision of controversies; in the very last description, *pigra & tarda alvi depositio* was numbred as a symptom of age, because the *spincter ani* is hardly and seldom retracted for the natural evacuation of the excrements of that kind; yet *alvi humiditates* * are reckoned as an attendant on the same state, because without any opening of the door, there is a preternatural flux that way. So also in their urine, there is a continual stopping, and yet

* Hipp. 1. 3. Apho. ult.

yet withal a continual dropping. The teeth are relaxed by reason of driness, and yet moisture expels them their sockets. Siccity of the eyes is their chiefest disease, and yet they run with a continual rheum; hardness and driness also is the temper of the brain, and yet it is always distilling *coryza's* and *catarrhs*. In a word, this distinction will be found of most general use, forasmuch as there is such an intricate mixture of naturalty and preternaturalty in age, so that that plain and easy description which is usually given of it, seems to me ingenious and most significant. *Senectus est morbus naturalis.*

All the daughters of musick shall be brought low.

The organs that have reference to musick in the body of man (beside which I would by no means seek an interpretation) are of two sorts. They are either such as make musick themselves, or such as take and receive the musick that is by others made; the first of these I call, *the active daughters of musick*, forasmuch as they are themselves musical, and every one of them bear their part in making of it; the other I call, *the passive daughters of musick*, forasmuch as they only receive it, taking delight in that, of which they have not the least share in making.

The *Chaldee* paraphrase hath reference to the first of these, when it saith, *remittentur labia*

tua

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tua à dicendo cantico. The lips, and whatsoever other parts in man, are any way instrumental unto singing, may be very well signified unto us by the *cantatrices mulieres*, or female choristers in the text; and these are very many in our bodies. For beside those remote helpers, the *thorax*, the *diaphragma*, the *muscles*, the *nerves*, the *glandules*, &c. There are three several kinds of organs, that do more immediately, and yet distinctly and gradually conduce to the production of vocal musick. The first, are those that prepare and administer the matter for a sound; the second, are those that form that sound into a voice; the third, are those that modulate that voice unto musick.

The first of these, are none other than the *lungs*, which are the proper instruments of our breathing; which how excellent it is in itself, and how necessary to our being, the scriptures of God do demonstrate without compare, *Gen.* ii. 7. *Job* xii. 10. The life of man in this world, runs parallel with his breath, *Psal.* civ. 29. *All the while my breath is in me, and the spirit of God is in my nostrils*, *Job* xxvii. 3. and the death of man is still signified by the departure of his breath; it is said of the widow's child, *He had no more breath left in him*, *1 Kings* xvii. 17. *Psal.* cxlvi. 4. Plainly throughout the whole word of God, breath and life, and soul and spirit, are synonymous, and often made exegetical one of another. Among other excellencies of

of breathing, that whereby it is made instrumental to speech and harmony is not the least ; in all wind musick, there must be first a gathering of the air into some cavity to contain it, and afterward a pressing of it forth into those pipes or holes, that are artificially made for the dividing it unto its appointed end ; now of this kind of musick is the voice, and the lungs being of a light, soft, spongy substance, are those parts, that do both draw in, contain, and press forth the air, the matter of the voice, according as there is occasion. And those creatures that have no lungs have consequently no voice ; so that fishes, which are herein deficient, are mute even to a proverb. And man himself, if by reason of any preternatural matter stuffing the lungs, or by reason of any violent motion, or long expiration, he becomes out of breath, he is not able to speak, much less to sing, till he have recovered it again.

The second sort of organs that conduce to musick, are such, as form the breath into a voice ; and they by *logicians*, under whose subject they do directly fall, are accounted nine, numbred up in this following distich :

*Instrumenta novem, sunt guttur, lingua, palatum,
Quatuor & dentes, ac duo labra simul.**

And moreover, hence it is that the wisest of *grammarians*, observing that the several words,

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beginning *Smith* aditus ad Log. l. c. 2.

by which man uttereth his voice, are formed against these several parts, sometime more against one, sometime more against another; have aptly divided their letters, the first compounding parts of words, into *gutturales*, *linguales*, *palatinas*, *dentales*, & *labiales*, according as in their pronunciation they bear themselves the hardest against either of those parts.

That part which these two artists have called *guttur*, anatomists do more strictly and properly call, *trachæa sive aspera arteria*; and since the word artery is derived ἀπὸ τῆ τὸν αἷρα τρεφῶν, this of all the parts of the body may primarily and most aptly bear that name: for this is the great conduit-pipe of air in respiration; it gives pass unto it in *inspiration*, and and in *expiration* (whereby the voice is framed) it gives a certain impresson, which is the first alteration of it towards articulation; which impresson doth remain in the voice when perfected; so that if these parts do first dispose the voice to hoarseness or shrillness, or any other preternatural tone, the whole speech hath a tincture of the same imperfection. And hence it is, that the *Welsh* pronunciation being performed by too hard a collision of the air against these parts, makes all their letters and words to become *guttural*.

The second instrument of the voice is the *tongue*, and this, by reason of its fungous substance, and volubility, is so meet, and so principal

principal an agent therein, that speech itself, and all the variety thereof, doth among all sorts of men go by the name of *tongue*; *There were in the days of the apostles dwelling at Jerusalem devout men out of every nation under heaven, Acts ii. 5. and they all said, we do hear them speak, ταῖς ἑντέροις γλώσσαις, in our own tongues, the wonderful works of God, ver. 11.* And this great miracle, both as unto hearing, and also unto speaking, is introduced by the appearance of cloven tongues, *ver. 3. to shew that the chiefeft instrument of the voice was to be acted by the Holy Ghost; For they began to speak with other tongues as the Spirit gave them utterance, ver. 4.* Among the many expressions that the word of God abounds with, for the confirmation of this truth, I cannot but take special notice of that of *David*, where he saith, *There is not a word in my tongue, but thou knowest it altogether, Psal. cxxxix. 4.* As if that member alone kept the power of words within itself, and ordered them all according to its own pleasure; and where there is an inability of speaking, it is aptly said, such persons are tongue-tied, and when that faculty is again restored, it is said, *the tongue is loosed, Mat. vii. 35. and so was it with Zacharias, concerning whom, after he had been dumb for a season, it is said, his mouth was opened immediately, and his tongue loosed, and he spake and praised God, Luke i. 64.*

The third instrument towards the formation of the voice is *the palate of the mouth*, for beside, that some particular letters and words are formed more immediately against this part, it doth also give strength and clearness to the whole voice, and to all the words that are pronounced in the mouth. And this it doth the better do, because the tenuous bone that makes the palate, is an arched roof, covered over with a nervous skin, corrugated with several asperities, for the better retaining and rebounding the air in the voice. And all our places dedicated to Divine Service, are made of the same concamerated form on the top of them, (questionless in imitation hereof) for the better sounding and echoing forth both of vocal and instrumental musick. And beside the bone which constitutes the palate, there is a little fleshy part, which is called the *uvula*, that doth so much contribute to the voice, that it deservedly retains the name of *plectrum vocis* *. That the palate or roof of the mouth is a great instrument in speaking, is sufficiently proved by the defect thereof, for if there be the least fault in this part, there presently succeeds a faltering in the speech. So that a man may say to any son of *Venus*, who hath followed her destructive enticements to this imperfection, *Thou also art one of them, thy speech bewrayeth thee.* This part, together with that last mentioned,

Paulus Aegineta, l. 6. c. 51.

tioned, is taken notice of, as serviceable unto speech, by *Job*, when he saith, *The nobles held their peace, and their tongue cleaved to the roof of their mouth*, *Job* xxix. 10. And God himself saith unto the Prophet, *I will make thy tongue cleave to the roof of thy mouth that thou shalt be dumb*, *Ezek.* iii. 26.

Fourthly, *The teeth*, and especially the four fore-teeth, are very instrumental to our speech; *dentition* and *locution* are for the most part contemporaries; tooting and speaking usually come, and go together; the child cannot speak till he put forth his teeth, neither can he speak well, when he sheds them, nor leave his lisping till they come again. And the reason of it is, because there are many words that are pronounced by the dilatation of the tip of the tongue, and clapping of it against the teeth, which any man may easily experiment in himself, if he will but gently assay to pronounce any word that hath *th* together in it; and all those operators that live by setting in of artificial teeth, do observe that they have more come to them upon the account of their speech, than for all other ends whatsoever; and indeed this ingenious help of art, doth in no other defect of nature make such compleat reparation.

The last instruments of the voice are *the lips*; even as the *aspera arteria* (as was said) gave the first articulation, so these do give the ultimate completion to our words; so that when they

have once slipped this guard, we can have no more power over them. *Nescit vox missa, reverti*: that which is gone out of thy lips thou shalt perform, saith the Lord, *Deut. xxiii. 23*. How exceedingly instrumental the lips are to speaking, the scripture doth abundantly prove, *He that will love life, and see good days, let him refrain his tongue from evil, and his lips that they speak no guile, 1 Pet. iii. 10*. Hence is it, that as the words are, so the lips are often said to be: therefore we read of *flattering, feigned, lying, unclean, stammering lips, &c. Psal. xii. 2; xvii. 1; xxxi. 18; Isa. vi. 5; xxviii. 11*. And again, words are elsewhere called, the fruit of the lips; *Let us offer the sacrifice of praise to God, that is the fruit of the lips, Heb. xiii. 15, Isa. lvii. 19*. And these are the second sort of organs that conduce to vocal musick, namely, those that form the sound unto a voice.

The third are those that modulate this voice into musick; and although it here must always be acknowledged, that every one of the parts before mentioned do also contribute something towards modulation; yet the more proper and peculiar instruments thereof are the cartilaginous parts of the *aspera arteria*, or the windpipe; and especially those which are termed, the *larynx* and the *glottis*. The *larynx* is the head of the windpipe, which although it be but a very little part, yet doth consist of more variety of compounding parts, than any other whatsoever;

as little as it is, it hath thirteen muscles belonging unto it, most of which are framed only for the modulation of the voice; some shut the pipe, some open it, some dilate, some contract it; so that acting severally, or jointly according as there is occasion, they do wonderfully conduce to the variation of the tone. It hath moreover five cartilages, whose substance and consistence is most apt of all other whatsoever, for the dividing of a sound; some of them are moveable, some immoveable, some of one form, some of another, that they may the better contain the air; and alter and break the voice into melody. Beside it hath certain glandules belonging unto it, which by their viscous moisture do so irrigate, and as it were oil the pipe, that it takes off the harshness that otherwise would be found, and adds much sweetness and pleasantness to the musick. The *glottis* is reckoned among the cartilages before mentioned, yet because it is the principal instrument of modulation, we cannot but take most special notice of it. And it therefore bears its name, because what eminency the tongue hath above the rest in reference to our speech, the same hath this part in reference to our singing; for the air being pressed forth from the lungs, this part riseth up to meet it, embraceth it, plays with it, and by a certain innate property of its own, without the help of muscles, alters it, divides it, at its own pleasure, into all that diversity of amplifi-

cations and flourishes, that the art of man can possibly reach unto. If a man make a pipe in the middle of a green reed, and leave the inward thin film as the tongue of the pipe, and then breathe against it; he shall then find, that tongue to receive the breath, and so to modulate it, that it shall be a lively, though but a short resemblance of what we are now speaking of. And indeed whatsoever art can do, must give way to the works of nature: And that one pipe in man, which hath the wisdom of God for its formation to the intent of musick, can amplify and divide a sound, to as much variety of musical accents, as *David's* instrument that had ten strings, *Psal.* cxliv. 9. For there is no instrument howsoever formed, that can surpass the musick of the voice, which is performed by the several organs we have here recited, which may therefore justly be called, the active daughters of musick.

The passive daughters of musick are those which only receive the musick that is by others made; and these are the organs of hearing; which indeed may most properly be called, *filiae carminis*, or *filiae cantici*, and seem primarily to be intended in this place; for as a learned commentator * rendereth the reason of it exceeding well; *ures ad hoc unum factæ sunt, ut voces & carmina audiant, quare ex iis natæ, eorumque filiae esse videntur.* And again, *objec-*
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* *Cornel. à Lap.*

tum delectabile efficit in auribus sensationem delectabilem, quare ejus quasi parens, & mater esse videtur. All the several graces and elegances of musick, the soft and silky touches, the quick and pleasant relishes, the nimble transitions, and delicate closes, are far more exactly represented in the instruments of hearing, than the image of the mother is in the daughter; *ventrem sequitur partus*, the birth is like the belly that bears it, but the musick that is heard, is even the same with that which is made: For there is a continuation of the audible species from the maker of them, to the last receiver; without any production of new. And that this may be the better done, there are several parts, both for the apprehending of the variety of sounds, as they pass up and down in the air, and also for the commodious conveying of them, that they may make a due impression upon the proper organs of hearing; plainly, there is the outward and the inward ear.

The outward ear is spread abroad like a net, that it may catch and gather into itself that *vocalem, or sonantem undam* *, as it rolls about the ocean of the air; which that it may the more conveniently do, the cartilaginous part of it is divided into two winding chanel, called the *helices*, or *elices*, which draw and suck into themselves the wave before mentioned, and pass it into the auditory gulph. I know the word

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helices

* *Avicen.*

helices is mostly wrote with an *H*, and then it must be derived from *ἠλέω cum aspero*, which signifieth *involvo, circumago, circumvolvo*. And thus primarily the word signifieth a certain sort of twining ivy, and from thence then must the metaphor be fetched, and that very appositely, relating to their form: But I rather incline to those who write it without an *H*, and then it must be derived from *ἠλέω cum tenui*, which signifieth, *coarcto, cogo, in angustum redigo, in arctum congreco*; and thus the word signifieth primarily, little chanelles that are made to draw the water from some great and broad overflowing, *fulci aquarii*, water furrows or trenches to draw in the stream; and this relates to their use. And thus it is an elegant metaphor from waters; for these parts do *elicere*, allure and suck into their narrower chanelles those sounds that wander more at liberty in the open air; and then they convey them to the *meatus auditorius*, which is sufficiently defended by the *tragus* that is over it, and the *antitragus*, that is near it, so that no violent noise can offend it, nor any preternatural matter fall into it, to obstruct it. This outward ear is placed upon the *os petrosum*, on the side of the head, and at some distance from the head, and were it not pressed and bound down while it was tender, it would stand at a farther distance, and consequently more commodiously for hearing; so that while our mothers and nurses study ornament, they
injure

injure us: Indeed, they do hereby make us more unlike to the beasts, but it is in such an excellency, that it were well for us if we surpassed them. And hence may the reason be given, why those that are thick of hearing may find great benefit by laying their hand dilated behind their ear, or using some *station-flicon*, and placing the mouth of it towards the sound, that they may thereby the better apprehend it; like unto those animals, that, listning after any noise, prick up their ears, as we say, and cast them forward, for the more expeditious receiving those motions of the air, that otherwise would pass by them more insensibly.

The inward ear is a great secret, and such an one, that while the men of greatest knowledge have gone about to find out and describe it, they have every one of them sunk under his burden, and confess'd his own inability in some such expression as the Psalmist concerning the general frame of man's body; *Such knowledge is too wonderful for me, it is high, I cannot attain unto it*, Pf. cxxxix. 6. The first part we meet with is a thin, strong, pellucid membrane, called, the *tympanum*, which being placed transverse the hole of the ear, doth divide between the outward and the inward ear, as the diaphragm doth between the breast and the belly; within this there are three cavities, the *concha*, *labyrinthus*, *cochlea*; there are

also three little bones, the *malleolus*, the *incus*, and the *stapes*; moreover, there is implanted in the ear, a pure, subtil, and quiet air, which is called *aer innatus*; and lastly, and chiefly, because the proper organ of hearing, we may observe the filaments, or the utmost extremities of the softer part of the auditory nerve, as they are wonderfully disposed in the inward cavity by the innate air; and then the whole nerve itself; by the help of these several parts our hearing is thus performed. The motion of the air (as that of the water) is continued by certain circles and rings, till it be taken by the outward ear, and by the *elices* is conveyed upon the head of the *tympanum*, where it makes the very same impression that it received from the body that made it; which impression, by reason of the conjunction of the bones before mentioned, is continued unto the innate air, which, because in itself most quiet and still, is easily moved according to the motion of the *tympanum*; so that the filaments hereunto annexed must of necessity answer the foresaid motion, and so consequently gather into themselves the sound or musick, which they convey to the auditory nerve, that from thence it may be sent to be discerned and judged in the inward sense.

These are the daughters of musick, which, so long as man abides in strength, are exceeding lovely, and flourish; but as he declines
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in age, these also pass their flower, they become humbled, and decline apace towards uselessness and deformity.

In age the several holes and cavities of the ears are stopped, the drum is unbraced, the hammer is weakened, the anvil is worn, the stirrop is broken, and the inward air is mixed and defiled; the filaments are dulled, the nerve itself is obstructed; so that there cannot but follow heaviness of hearing, and at last deafness itself. And this is that imperfection which *Barzillai* complains of to King *David*, *I am this day eighty years old, and can I discern between good and evil? Can I hear any more the voice of singing men, and singing women, wherefore then should thy servant be yet a burden to my lord the King?* 2 Sam. xix. 35. And this certainly is the principal symptom here intended by these words, *The daughters of musick shall be brought low*. And therefore the vulgar *Latin* translates it only, *obsurdescent omnes filiae carminis*; but the word *נָשָׁא* is of a far larger signification, and might be translated many ways, as *deprimuntur*, *dejicientur*, *incurvabuntur*; but cannot possibly be better translated than it is already by the *Seventy*, *ταπεινωθήσονται*, *humiliabuntur*, *brought low*. And this still holds out the native latitude of the word; which I would by all means have preserved; that all the daughters of musick, both active and passive, and their infirmities in age may be here

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included; so that all those symptoms of the decrepit state of man, that belong to any of the organs before mentioned, whether of speaking or hearing, are to be understood by this last clause; *All the daughters of musick shall be brought low*; and such are these that follow: *Dyspnœa sive spirandi difficultas, destillationes tussim inferentes; ἀσυνδία ἀφωνία, sive vocis abolitio, diminutio aut depravatio; exsiccatio asperæ arteriæ, induratio cartilaginum laryngis, sordes aurium, præcipuè autem barycoia sive gravis auditus & surditas.*

VERSE 5.

Also when they shall be afraid of that which is high, and fears shall be in the way, and the almond-tree shall flourish, and the grasshopper shall be a burthen, and desire shall fail; because man goeth to his long home, and the mourners go about the streets.

Hitherto age hath been described unto us, as it hath influence upon all the functions and faculties of a man; superior and inferior; inward and outward; animal, vital, and natural. And the preacher hath exactly declared unto us, how far they are all weakened in this declining state; he now in this verse passeth to another head of symptoms, which is usually called, *qualitates mutatae*, taking notice of the simple affects, and those eminent and

most remarkable alterations that attend men in this condition. And here again he doth most elegantly run over all the parts of man, and give only one most significant alteration in each of them. The compounding parts of man (as all men know, and as we have already heard) are the soul and the body. The principal affect of the mind in Age is that of fear, which is here expressed in respect of a double object, a greater and a lesser; which consequently makes the passion lesser or greater, according to the encrease of age; *They shall be afraid of that which is high, and fears shall be in the way.* The parts of the body are either inanimate, or animate: of the inanimate parts, the hair receiveth the greatest alteration in age, which is here signified in these words: *The almond tree shall flourish.* The animate parts of the body, are also of two sorts, either the hard, and crusty parts, or the soft and spongy parts; and these two are usually known by the names of the spermatical and sanguineous parts. The change of the former of these in age is intimated unto us in those words: *The grasshopper shall be a burden;* the change of the latter in those, *desire shall fail;* as it followeth more clearly hereafter. After this most mysterious and hieroglyphical description of the symptoms of age, he doth in a plain and easy transition pass from those general symptoms that attend a man all along this state

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state of weakness, unto those particular ones, that do more immediately forerun his dissolution: *For man goeth to his long home, and the mourners go about the streets.*

They shall be afraid of that which is high, and fears shall be in the way.

The powers and faculties of the mind, as they are weakened in age, are abundantly described in the second verse: In these words is notified unto us, that most remarkable change that is made upon the affects and passions of the mind in the same condition. And this is only in respect of fear, and those that are nearly related unto it. For as for those which are placed, ἐν τῷ ἐπιθυμητικῷ, *in appetitu concupiscente*, such as love, hatred, desire, joy, and the like; they are in no wise excessive in this weak state of age, forasmuch as a firm and a vigorous habit of body, quick and lively senses, both outward and inward, do most promote them; so that where there is a general defect in both these, and all desire doth fail, it is not to be supposed, there should be any predominancy of any of those passions, that proceed from the concupiscible appetite; as for those which are placed, ἐν τῷ θυμικῷ *in appetitu irascente*; they all have for their object either good or evil; those which have good for their object, as hope, and such like, have little or no place in the time of age, forasmuch

asmuch as it is an evil time, and there is no pleasure in it. Now all imminent evil is looked upon either as vincible, or invincible; if a man look upon an approaching evil, as that which he is able to overcome, it naturally produceth boldness in him, which is the contrary passion to fear, and can in no respect agree to the same persons. It remains therefore, that that distress of the mind, which ariseth from the apprehension of some approaching evil, that is either destructive or burdensome to our nature, and not easily resistible by our strength, is the passion that is most incident to age. True it is, that anger and vexation, grief and sadness, and such like, as have for their object some present evil, and border hard upon this we are speaking of, may in some measure be found in age; yet the true and proper, the most notorious trouble of the mind, is that dumpish, melancholy, destructive passion of *fear*; which together with all its attendants and necessary consequences, such as suspicion, jealousies, superstition, dislike, inconstancy, betraying the succours of reason, are too familiarly observed in the best of men that are crooked with age; and by how much the more man declines, by so much the more do these superfluities encrease, like mistletoe, and some other excrescencies of trees, that flourish not, till the stock decay from which they spring. And the reason of
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it is, because the true causes of this affection (namely, misapprehensions of the things feared, and inability to resist them) are encreased together with age, and therefore must needs produce their answerable effects. The first of these causes proceeds from the weakness of the imagination; the other, from the lowness of the spirits, and imbecillity of the outward organs. The first makes the cause of fear to seem the greater; the other, to take the deeper impression. Imagination puts a double fallacy upon ancient men; first, it makes them undervalue themselves, and minorate their own abilities; and then it makes them overvalue the objects of fear, and make them far greater than they are; like some perspective glasses, that at both ends misrepresent the things seen, yet with a contrary appearance, at one end making them appear lesser, and at a farther distance; and at the other end, greater and nearer than they ought. And hence it is, that they are so timorous upon every the least occasion; that which is said of wicked men may also be said of old men; *They are in great fear where no fear is*; Psal. liii. 5. *quæ fixerè, timent*; the weakened imagination creating objects of fear unto itself, or at least much falsifying them, and encreasing them like the man in the gospel, that had but an half and a broken sight, *He saw men as big as trees walking*. Again, the dulness and heaviness

vinefs of the fpirits, and the impotency of the members, render a man moft obnoxious unto fear; the fpirits being of a ftrong, quick, and fubtile motion, are the principal instruments of intercourfe between the foul and the body, and do confequently bring in the greateft aid and affiftance againft this paffion; but, in age they are benumbed as it were, and congealed, fo that they ceafe much from their operation and motion, and can adminifter little or no courage at all.

Nor is it thus only with the fpirits, but the organical parts alfo of the body are in this ftate made unfit for their functions, and altogether unferviceable to refift the very appearance of danger; and ftand (as I may fo fay) ready prepared for the entertainment of fear; the great confequences whereof, fuch as whitenefs and ftiffnefs of the hair, trembling of the joints and heart, impotency of fpeech, failing of the eyes, and aftonifhment, palenefs of the face, horror, gnafhing of the teeth, involuntary emission of excrements, are very eafily produced in this condition; nay, they are moft of them already there to be found, without an object to effect them; therefore no wonder if thofe things which are τὰ νένα κινδύνων to the ftrong man, prove φοβερώτατα to the decrepit.

Thefe things were known to be true, without an inftance; yet, I cannot but take notice

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tice of *Jacob*, who, while young and strong, did exceed most men we read of, for courage and boldness; with what audacity did he manage the two great enterprizes of obtaining both the birth-right and the blessing; and that while he was yet very young? with what courage did he undertake, and go through with a long and lonesome journey, an hard and a deceitful service? but when he was old he was of a more timorous spirit: it was fear let fall that passage, *If I am bereaved, I am bereaved*, Gen. xliii. 14. Such news as one would have thought would have refreshed his heart, when he was old overcame it; *for when it was said Joseph is yet alive, and he is governor over all the land of Egypt, Jacob's heart fainted*, Gen. xlv. 26. Fear was a passion so ready at the door, that it stept in first, and had almost over-borne him, and left no place for joy to enter in. Good *Eli*, when he was very old, was very fearful, he timorously reproves the outrageous wickedness of his sons, 1 Sam. ii. 22. and after this black and dreadful enemy had once taken possession of him, it followed him continually, and dogg'd him till he died. When the *Israelites* and *Philistines* were about to join battel, he sate in a fearful posture, and it is said, *his heart trembled*, 1 Sam. iv. 13. and when the issue was told him, *he fell from off his seat backward, and his neck brake that he died*; and the reason is added, *for he was an old*

old man and heavy, ver. 18. I will not here be so bold as those that say (building their opinion upon the original word) his falling down backward and dying, was from a voluntary principle; but I dare say, it was from an inward one: his age had so enfeebled him, that he was not able to bear the news of a defeat, especially such an one, wherein the ark of God was taken, but his darksome inward foe, taking advantage hereupon, strikes him surely, under the fifth rib, that he died.

The objects of old mens fears are here presented unto us under a double notion; first, those things which are high, *excelsa timebunt, aut de excelso*; they shall be afraid of that which is high: Secondly, those things which are lower, more plain and obvious, even in the way; *consternati in via, vel formidabunt in viis*; fears shall be in the way. Consternation and fearfulness do not surprize men, and overthrow them all at once; *nemo repente fit timidissimus*; but they come on by degrees, and first those things that have more of dread in them become the objects of their fear: *High things*; *high*, either in respect of place, as steep and eminent ways, hills, and mountains, steeples and towers, which formerly they could without fear ascend, and walk upon; or *high*, in respect of the air, as fiery meteors, strange apparitions, thunder and lightning, and such like: or *high*, in respect of abstruseness, or
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myfteriousness, as the deep and subtile points in divinity, about the essence of God, and the duration of eternity, about the immortality of the soul, and changes of the body, and many other things, which while young they could better have borne the discourse of: or *high*, in respect of hardship, or difficulty; those great enterprises, and hazardous undertakings, which while strong they durst with boldness have ventured on, do now become a terror to them, even in the thought of them; but as age comes on, and their fears increase upon them, not only those things which are high, but even plain and easy things become the objects of their fear; *pavoris in via*: Mole-hills are now as dreadful as mountains were before; every thing that is near them, and about them; every thing that is plain and obvious; every matter that is facile, and easily attainable, bears itself with terror towards them; they are afraid of every thing they are doing: they walk in fear, sometimes, lest peradventure they should dash their foot against a stone; sometime lest that other people, heedlessly passing by, should rush upon them, and injure them: being conscious to themselves of their own impotency, it makes them most obnoxious to this terrible passion, which is the great change that is made upon the mind in the time of age.

The almond-tree shall flourish.

The symptom last treated of was in reference to the great change that is made upon the *mind* of man ; those which follow have reference to the *body*. And that we may accurately observe the wise man's method, we must premise one common distinction of the parts of the body ; for we must know that these are not independent sayings, cast forth at a venture, but a most exact and methodical treatise of the symptoms of age, as it influenceth and altereth all the parts of a man : Now the parts of the body (as the word is taken in the largest signification) are either animate or inanimate ; either such as participe of the life of the whole, and are nourished by the intra-susception of enlivened aliment ; or such as have no life at all from the body, or in themselves, and are nourished only by the juxta-position of an excrement : Of the first of these, there are very many in the body of man, which are treated of in the following words : of the latter of these there are very few, as the nails and the hair ; and of these the hair receiveth the most notorious alteration in age, which is here signified unto us by these words ; *The almond-tree shall flourish.*

The

The word which is here translated an *almond tree* is from the original word שָׁכַר, *advigilavit*, to watch, or wake, as it is used in that place; *The watchman waketh but in vain*, Psal. cxxvii. 1. And by way of analogy it is translated to signify *amygdalus*, the *almond tree*: *Quæ prima inter arbores evigilat*; because this tree before all others first waketh, and riseth from its winter's repose; it flowers in the month of *January*, and by *March* brings its Fruit to maturity*. The forwardness of this fruit-bearing tree is intimated unto us by the vision of *Jeremy*; for the word of the Lord came unto him, saying, *Jeremy what seest thou? and he said, I see a rod of an almond tree: Then said the Lord unto him, thou hast well seen, for I will hasten my word to fulfil it*, Jer. i. 11, 12. The same word is in this text used, both for the *almond tree*, and for *hastening*; *Thou hast therefore well seen*. Nothing could have better represented the speedy fulfilling of the word of God, than that *hastening*, the *almond tree*. The manner that the wise man is pleased here to take, to express the great changes that happen to the body of man in the time of age, is according to that intricate, and most mysterious, and ænigmatical way of the *Egyptians*; whereby they are wont to express their meaning of the things intended, by some other creatures which do most resemble what they are speaking of. Now there

* *Plin.* lib. 16. c. 25.

there is no change that befalleth man that can be so livelyly represented by the blooming of the almond tree, as that whereby the hair of the head becomes hoary and white; and therefore *florebit amygdalus*, must needs signify unto us, this great alteration; which bears resemblance unto that of the almond tree in several particulars, some of which follow hereafter.

First, They are both of them of the same colour, and represent themselves alike to the sight; the blossoms of the almond tree are perfectly white, and so are the hairs of the old man, and they are not only nakedly of the same colour, but both of them so, by way of eminency; not only white, but the whitest of all, none so white as they: *Flores amygdali primi existunt & maximè sunt albi præ cæteris arboribus*. So also is it with man in the time of age, he is white, and no creature, living to that time, so white as he: And hence it is that *logicians* make *canescere* to be *proprium homini, tertio modo; quod convenit omni, soli, non semper*. They will allow no creatures at all to grow white when they are old, as man doth: and although our sense teacheth us, that almost all creatures tend towards that colour, yet they very much vilify it in comparison of a man, and therefore give it a far more inferior, and an unhandsome name*.

Secondly,

* *Gricesceres.*

Secondly, They do very much agree in their hastiness, and forwardness of putting forth; how early and quick the almond tree is in putting forth its bloom and fruits hath been already shewn; and might yet farther be confirmed in that great mystery the rod of *Aaron*, which although it was miraculously changed in one night's time, as a token against the rebels, to take away their murmurings; yet it is to be noted, that it was done upon this forward wood: *And it came to pass that on the morrow, Moses went into the tabernacle of witness, and behold the rod of Aaron for the house of Levi was budded, and brought forth buds, and bloomed blossoms, and yielded almonds.* But naturally also, this blooms much sooner than other trees; this is the true *erigeron*, that early in the spring-time bears the representation of old age. Now it is better known to all men how exceeding forward gray-hairs are.

*Obrepiit properata malis inopinata senectus,
Intempestivi funduntur vertice cani.*

There is no symptom of age puts forth itself sooner than this; and as the almond tree buds sooner by two or three months than most other trees, so do these hasty buds of age appear sometime twenty or thirty years before some others: Some mens hair begins to change when they are but thirty or forty years of age, whereas many other symptoms appear not till they

they have passed sixty or seventy years. These steal upon men suddenly, before they are aware, to which the prophet doth allude in those ripe and unexpected judgments that were falling upon *Ephraim*; *Gray hairs are here and there upon him, yet he knoweth it not*, Hos. vii. 9.

Thirdly, They do agree in their eminency and remarkableness, they are both of them most signal things; men stand still and admire if accidentally they cast their eyes upon the almond-tree that stands all on the blossom; and so they do if they behold a comely and honourable head of hair, that is as white as that: The trees that blossom in *March* or *April* are little taken notice of, because then it is a common thing, neither have they that splendor upon them, that the almond-tree hath, that advanceth its most comely top all alone, while all other sleep in their winter garments. In like manner the almond head is taken special notice of among a thousand, every one being very desirous to behold it, and that with great admiration and reverence; *The glory of young men is their strength, and the beauty and honour of old men is the gray-head*, Prov. xx. 29. And this honour is put upon it by the special appointment of God himself; *Thou shalt rise up before the hoary-head, and honour the face of the old man, and fear thy God: I am the Lord*, Lev. xix. 32.

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Fourthly,

Fourthly, They are very much alike in their indications; they are both of them most certain *diagnosticks* of the thing they appertain to; if there are no other signs than they, yet may all men be very well assured of the truth they bespeak: If there be no other tree in all the woods, or orchards, blossomed beside the almond, yet know assuredly from thence, the spring is come: if there be nothing at all besides that shews it; if no flowers appear on the earth; if the singing of the birds be not come; if the voice of the turtle be not heard in the land; if the fig-tree doth not yet put forth her green figs, nor the vines with their tender grape give a good smell, *Cant.* ii. 12, 13. yet if the almond-tree be blossomed, know of a truth, that the year is turned, that the sun is coming nearer towards us, and that the sap stirs, though it be not elsehow perceived. The same certainty of demonstration also doth attend the hoary head; if no other symptom appear, yet if the hair begin to change white, know from thence, that the winter of age hath already begun to shew itself; the evil days are coming on apace, though the sun, or the light, or the moon, or the stars be not darkened: Though the keepers of the house, the strong men, the grinders, and the lookers out of the windows, be not yet enfeebled; though the doors be open in the street, and the voice of the grinding, and the daughters of musick be as high

high as ever ; yet if the almond-tree flourish, if the hair of the head be changed to white, it is an undoubted indication of the weakness attending age ; the habit of the body is already changed, the innate heat begins to be suffocated, the radical moisture is consuming, the excrements (which constitute the hair) are concocted, and the temperament of old age hath already seized the man, although it be no other ways to be discerned.

Lastly, They do also exceeding well agree in their *prognosticks* ; they are both of them most certain forerunners and foretellers of what is to follow after them. If the almond-tree be blossomed, it is a most certain sign that fruit will come after, and that it is not far behind : *Aaron's rod* budded (as you heard) and soon after it brought forth almonds ; the flowers are in order to the fruit that must succeed.

— Cum se nux plurima sylvis

Induet in florem, & ramos curvabit olentes,

Si superant fœtus, pariter frumenta sequentur.

And thus gray hairs, the flowers of old age, do give a certain prognostick, that death, which is the fruit thereof, is near at hand. *Jacob* saith concerning his son *Joseph*, *If mischief befall him by the way, then shall ye bring down my gray hairs with sorrow to the grave*, Gen. xlii. 38. A sad accident might have brought them

down with sorrow to the grave; but they would have come as *surely* without. These are church-yard flowers, which may serve to them that bear them, instead of passing-bells, to give them certain notice, whither they are suddenly going. There are some naturalists who are yet bolder, and affirm, that the very thought and imagination of gray hairs, even in the dreams of them, though in a person never so young, do portend the same thing. When they were sacrificing in behalf of one of the emperors of *Rome*, the hairs of a boy's head, who did administer to the priests, were all on a sudden changed to white; which the soothsayers and wise men did presently interpret to the change of the emperor, and that an old man should succeed; which accordingly fell out; for *Nero*, who was but one and thirty years old, was soon taken away, and *Galba*, who was seventy-three, reigned in his stead. There is far more certainty in the reality of the thing. It may thus fall out to young men, but it must thus fall out to old: *Mors, senibus, in foribus est; juvenibus, in insidiis*: Young men are taken away, but old men go away, in their own natural course; for *candidi* are *candidati mortis, & per eam, immortalitatis*. Those that are white are marked out in order unto death, and thereby unto immortality. There might many other particulars be assigned, wherein the almond-tree and the hoary head

do exactly agree ; but these few may suffice to shew us, that the change of no other part of the body in age, can be hereby figured out unto us so properly as this we have been speaking of.

Beside *canities* is a constant attendant on age, and is intimated unto us in no other part of this allegory : How often in scripture are they mentioned both together ? *I am now old and gray-headed*, saith Samuel, 1 Sam. xii. 2. and David prayeth, *When I am old and gray-headed, O Lord, forsake me not*, Psal. lxxi. 18. Nay, I may say one thing of this symptom, that is not said of any of the other ; it is a plain and a full description of age, without any addition at all ; say a gray-headed man, and you say an old man, without any farther *periphrasis*. *The sword without, and terror within, shall destroy both the young man, and the virgin ; the suckling also, with the man of gray hairs*, Deut. xxxii. 25.

The grasshopper shall be a burden ;

Or rather,

Shall grow (or shew) big and burdensome.

In the interpretation of this sentence, and that which follows, which doth depend hereon, I must of necessity recede somewhat both from the common translation, and the usual interpretation of the place ; wherein, if my opinion, together with its novelty, bring along

with it any thing of satisfaction, I presume it will be never the worse accepted: For in these theoretical notions, the danger is not so great, to deviate from the beaten road, and to be heterodox to the generally received opinion. For the subject of this proposition, without all controversy it is the locust or grasshopper; which differ very little, either in their nature or form, and may very well intend the same thing: The predicate is far more difficult, and therefore hath given occasion to more variety of translations; that which is most usual is, *erit oneri*, which our *English* exactly follows, *The grasshopper shall be a burden*; from whence most interpreters do put this sense upon the place, *viz.* that the grasshopper, or any such small thing, is a great burden to old men; which although it may be a truth, yet it can in no wise be intended by these words: For then king *Salomon* would in this clause vary much from the general scope of all these verses, which is (as hath already been said) allegorical, and from the particular mode of expressing himself in this verse, which is hieroglyphical. Beside, the words in no propriety of grammar can possibly bear such a sense as this; and it hath been a great wonder to me how this construction was first taken up, and how it hath gained so great credit among men: Nor can I yet give myself the least satisfaction herein, unless it be from the ambiguity of the *La-*

tin phrase, *erit oneri*, which may very well be taken in a double sense; either *erit oneri seni*, *seu alteri*; or *erit oneri sibi*. The first of these must be taken for the carrying the words to the interpretation which hath been before mentioned; but how incongruous it is to the very grammatical reading of the words, any one who is the least skilled in the original can easily give an account. For what is here predicated is directly predicated of the grasshopper, and not in relation to any other person, or thing else whatsoever. And hence some have translated it, *onerabitur*, *sive gravabitur*; others, *onerabit*, *sive gravabit se*; others, *creset*: the vulgar *Latin* gives the metaphor one remove more, to those that are burdened with flesh or fat, rendring it, *impinguabitur locusta*; but the translation of the Septuagint upon this word is most remarkable, and gives very great light to the understanding of the true meaning of the place, $\pi\alpha\chi\upsilon\theta\eta\iota\ \eta\ \alpha\gamma\alpha\iota\varsigma$, *Crassabitur, densabitur, vel pinguescet*. Wherefore, that the doubtfulness of speech, both in the *Latin* and *English*, (which hath misled most interpreters) may be for the future removed, I judge it most convenient that the translation of the vulgar *Latin* take principal place, or that it be rendred in *Latin*, *locusta, onustam se reddet*, or, *præbebit*; which the conjugation doth mostly favour; and in *English*, the grasshopper shall grow (or shew) big and burdensome. For the

right understanding of which words, we must be sure to enquire, what parts of the body of man they are, that may be most aptly represented by the grasshopper, and what change that is, that is here denoted unto us: Which that we may the better do, we must also take notice of one special distinction of the parts of the body.

Of the parts of the body that are enlivened by the spirit of the whole (for of the other mention was made in the last) there be two sorts: Either the fluid, moist, succulent, tender, and soft parts of the body; or the dry, solid, tensile, hard, and crusty parts of the body. The first of these seem to be intended in the following words; the last of these, in these that are before us. This distinction is usually termed, the distinction of the philosophers, in opposition to all those manifold divisions of the parts of the body, that are to be found among physicians; and indeed it hath more of clearness and demonstration in it, than any of the other; neither that of *Hippocrates* in ἰχνοῦτα, ἰσχυρόμενα, ἔσπερμωτα; nor that of *Galen*, in *spermatikas* ἔσ *sanguineas*; nor that generally received among most, in *similares* ἔσ *organicas*, is without its difficulties; it hath put very learned and ingenious men very hard to it, to make the best of these stand firm against its opposers: but this that we are now speaking of, is so plain and obvious to the sense,

sense, that no man ever yet disallowed of it; or hath at any time undertaken to contradict it. Indeed, that distinction of the parts into spermatical and sanguineous, as usually it is applied, comes the nearest to what is here intended; but the terms are not so proper; and beside, they are built upon a false foundation, which is, that the several parts of the body have their origination from several and distinct principles of generation, *viz. semen & sanguis menstruus*; but the ingenuity of this latter age, hath justly exploded such a doctrine as that, and hath brought all knowing men to confess, that all the parts of the body, both of one kind and of another, have their original equally from one and the same seminal matter. And yet the former distinction of the parts, *in molles & duras*, may be found to have a just right, even from their first producer. For the seed itself is not of so equal a substance and consistence, but that variety of parts, as to softness and hardness, may easily be discerned in it. And this *Job* (beyond all human writers whatsoever) doth plainly declare, when he saith, *Thou hast poured me out like milk, and curdled me like cheese*, *Job* x. 10. The very first matter of generation in this respect hath a double substance; there is a lacteous, and a caseous part therein; there is a tenderer and a more fluid part; there is also a more condensed and coagulated part; which are apt to produce afterward parts in the

body of the like diversification; as the following verse doth plainly express; *Thou hast covered me with skin, and with flesh, thou hast fenced me with bones and with sinews*; bones and sinews, they proceed from the curdled part of the seed; flesh of all sorts, both musculous, parenchymous, and glandulous, that proceeds from the fluid or milky part; and skin, that is the *medium participationis* of them both. *Flesh and bones* therefore seem to stand in the greatest opposition one unto another in respect of this distinction of the parts; and all the other parts of the body to each other, as they have relation to one of these. Now which of these two the grasshopper doth best resemble, is very easy for any one to give an account.

The locust and grasshopper are both of them hard, crusty, cragged, crumpling creatures, differing from all others principally in the protuberance of their limbs, having their legs strangely crooked, and their joints very closely inverted, and at a great distance from the trunk of their body. And this is the most remarkable thing in their frame, and that by which they are described in the Book of God; *Yet these may ye eat of every flying creeping thing that goeth upon all four, which have legs above their feet to leap withal upon the earth, Lev. xi. 22.* And afterward they are enumerated, *The locust after his kind, and the grasshopper after his kind, ver. 23.* This then being the known form

form of these creatures, they do most aptly represent the hard and solid parts of the body, the bones and their protuberances, and all those parts that are produced from the thicker part of the seminary matter. *Osteologers* have very well observed, that the parts appertaining to the bones, which stand out at a distance from their bodies, are either the adnate, or the enate parts, either the *epiphyses*, or the *apophyses* of the bones. The first of these in age grow harder and more compact and affixed to the bones themselves; the last of these in age grow more apparent, and seem to be bigger, and stand at a farther distance than they did before: And unto this it is that the *Chaldee* paraphrase doth directly point, *inflabuntur tali pedum tuorum*. Now, the *tali* are sometimes taken for the *astralagi*, the bones in the heel, and sometimes for the *malleoli*; the *apophyses* of those two bones which constitute the leg, namely, the *tibia*, and the *fibula*; all which, together with them that answer them in the wrist, and all other bunching parts of the bones, (which would be needless particularly to name) do in age appear far bigger, and at a greater distance from the body of the bone, than they did before. Yet I cannot but take more special notice of one sort of bones, whose *apophyses* are more eminent, than any others; and may therefore be more aptly resembled by the grasshoppers, and they are the *vertebræ* of the spine;

spine; every one of which, both in the neck, in the back, and in the loins, have seven several prominencies, four oblique ones, namely, two ascending, and two descending: two transverse ones, and one acute, straight forward towards the skin. Now, when man, by reason of age, begins to stoop and bend forward, and withal those fleshy parts, that cover these processes, begin to shrink and decay, (as shall be shewed in the following symptom) it must necessarily follow, that all those *apophyses* must appear a great deal plainer and bigger than they were before; whereby they will so exactly resemble the several protuberances of the limbs of the grasshopper, that no words can sufficiently express their likeness, and none but the diligent observer of them both can possibly understand. And from this exact likeness, without all doubt, arose the fable of *Tithonus*, that living to extreme old age, he was at last turned into a grasshopper; and into it, it may be very well moralized again; for then the body of man is quite another thing than what it was in its prime; it is contracted, and becomes much less, and crumpled up together, and in the end is brought even to crawl upon the ground.

Contrahimur, miròque modo decrescimus ipsi,

Dimidium nostri corporis esse putes:

Fitq; tripes, prorsus quadrupesq; ut parvulus infans,

*Et per sordentem flebile serpit humum.**

✱ *Cornel. Gallus.*

There

There remaineth yet one reason more that induceth me to believe, that the parts we have been speaking of are principally here intended, and that is taken from the word which is here the predicate, whose root **כבד** signified primarily, to carry or bear burdens, *Lam. v. 7. Ezra vi. 3. Neh. iv. 10.* and in this sense it is mostly used. Now, the parts in man that may be called the porters, and which bear the burdens that are carried, can be no other than the *scapula*, and its *acromion*, which is the part upon which the burden is pitched; and the back bone which is the part that gives the greatest strength towards the bearing of it, both which, when age hath much enfeebled a man, become unserviceable as unto those ends; these porters do now become a porter-age themselves, and those parts that were wont to bear the greatest burdens are now so great a burden themselves, that the man stoops under them, and is scarce able to bear them.

Now, as the bones are principally here intended, so also all the other parts of the body, that are made of the same crassiment of seed, may be here included; and if we do but here recal the translation of the **LXX**, we shall understand what change it is in age, that all these undergo; the cartilages of the body, the ligaments, the membranes, the fibres, the veins, the arteries, the nerves, the tendons, and the like,

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like, do all grow harder and drier in age, and tend more towards the nature of bones. The skin also, being partly of this kind (as was before said) is to be numbred hereunto, which so long as man remains in strength, is beautiful, plain, and polite; but as he declines, grows more crusty, and dry, and callous, and consequently falls into abundance of wrinkles.

*Plurima sunt juvenum discrimina, pulchrior ille
Hoc, atque ille alio
Una senum facies.*

And that learned phyfician*, (who in his youth had wearied himself out with the uncertainty and confusion of profane authors, and therefore in his age betook himself to sacred philosophy) that he might more powerfully assign over this hieroglyphical expression to the sense we have here delivered, saith; the locust ought to be understood of the sea-locust, which is covered over with an hard, and a crusty and rugged shell: and whosoever shall so take it, cannot but conclude, that it doth decipher the parts we have now treated of. However, I judge the land-locust, or grasshopper may very well signify the same thing; beside, it is much better known to men, than the other is, and may be extended to some parts (that ought here to be included) which the other cannot so significantly denote; for

* Vallesius de sacra Philos. c. 66.

by this clause, the grasshopper shall be a burden, we are to understand the alteration of all the more hard and solid parts of the body, usually called the spermatical; *ductilium*, viz. *induratio*, & *incrustatio*; & *fragilium extantia*, & *prominentia*.

Desire shall fail,

Or rather,

The capers shall shrink.

The word האב"ינה hath two remarkable significations, the one primary and plain, whereby it signifieth, *desiderium*, *concupiscentia*, *appetitus*; desire, or appetite; the other, secondary or figurative, whereby it signifieth *capparis*, capers, or the fruit, or rather the flowers of the caper shrub, or bush. And this word is translated from its first signification to this latter, because of the known use of capers, which is to excite the appetite: *Capparis excitat orexin*, & *appetitum*, *cibi*, & *veneris*: from whence it is, that some do not improbably derive the word from *καπραιω*, *ad luxuriam concito*; and for these ends, especially that of the stomach, are they preserved in pickle, and so often used among us for sauce. Now, that the word in this place ought to be taken in this latter, that is, in the figurative signification, these following reasons do induce me to believe, every one of which sing-

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ly, seem to have a good persuasive power ; but all of them jointly have doubtless a compulsive power, to any rational man to be of the same opinion. The first, is the general scope that the wisdom of *Solomon* proposeth to itself in this whole description of age, which is by way of allegory all along : No wonder therefore if the same wisdom, where there be two significations of a word, shall rather prefer the allegorical. The second, is the particular intent of this verse, which is to shew the sensible alterations that are made in man in old age, both in respect of his mind, and of the several parts of the body, and that symbolically, or by way of resemblance to other things, and not at all to relate to any of the faculties ; and that which doth abundantly back this reason, is, that the weakned faculties were described before, and particularly it was shewn sufficiently how the appetite both *ad cibum* and *coitum* was weakned, in the last verse, in those words, *the voice of the grinding is low* : And therefore a learned commentator * upon this place, when he had said, *senum libido frigeſcit*, further adds, (that which might better distinguish it from what went before) & *organa coitus diſſipantur* ; which is indeed, the true purport of the words, though but in part. Again, the contextural expressions are of the self-same nature, both those that follow in the allegory,

* Cornel. à Lap.

allegory, namely, the silver cord, and the golden bowl: and also those that immediately precede, namely, the grasshopper, and the almond-tree: And as the word שֶׁקֶר was translated from its primary signification, which is, waking, (as was said) to that figurative of the almond-tree; so also would it be most congruous to deal with this word we are now about. Again, authority is sufficient, yea, abundant for this way of translating it: If any one please to consult all the variety of interpreters, he shall find (that which is a great rarity) the most and the best to go together, this way; and since *Hieron* did but give favour hereunto, I find no translator vary hencefrom, but some few into vulgar tongues.

Lastly, By this way of translating only, there will be a direct opposition, and a perfect *antithesis* (which certainly there ought to be) betwixt this word and that which immediately went before. The grasshoppers and capers are in their form and fashion, their substance and consistence, clean contrary one to another; the one, being protuberous, rough, crusty, and hard: The other, round, smooth, spongy, and soft: And therefore may be very fit emblems to represent the several contradistinct parts of the body, under the same variety of consistence. Wherefore, as the grasshopper did principally represent the bones, and secondarily, all those parts that proceed from
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the crassiment of the seed; so also here, the capers do as aptly represent principally the flesh, and secondarily, the other moist and fluid parts of the body that proceed from the more tenuous part of the seminary matter: and that which doth farther confirm this reason, is, from the *antithesis* that is also in the predicate of these expressions: For as there, the grasshoppers are said to grow big, or burdensome; so here, the capers are said to shrink or decay; for so the word *תִּפְּחַל* signifieth, and is usually translated, *dissipabitur*, *abolabitur*, *contrahet*, shall waste or consume, shall be spent, or worn out; and is a metaphor taken from interbastation, patching or piecing, sewing or clapping close together, making faster or harder those things, that were more dilated, spongy, and flourishing before: So that what we are to understand by this sentence, the capers shall shrink, is the alteration of all the moist and tender parts of the body, usually called, the sanguineous; *fluidarum*, scil. *depravatio* & *minoratio*: & *mel-lum ariditas* & *consumptio*. I cannot exclude hencefrom that change that befalleth the blood and natural humours of the body in the time of age: For they become low and much depauperated, they are diminished, and far less in quantity than they were before.

Mini-

Minimus gelido jam corpore sanguis.

Nor can I exclude that change that happeneth to the fat and marrow; man in his full strength is described by *Job* to be such an one, *Whose breasts are full of milk, and his bones moistened with marrow*, *Job xxi. 23, 24.* But when he is very old, there is scarce any milk, or fat, or marrow, or moisture left in all his body; a consumption is determined concerning them all. But that alteration which is principally here intended, is that which befallerh those parts of the body that usually go under the name of flesh. Now, the flesh of the body is of three sorts, *parenchymous, glandulous, or musculous*; the flesh either of the bowels or entrails, or of the glandules or kernels; or lastly, of the muscles, or outward parts of the body that are the instruments of voluntary motion. It is without all question, that the entrails of man, as the liver, the spleen, the heart, the lungs, &c. do receive great alteration in age, they decline very much from their softness, sponginess and porosity, and become far harder and faster, and more schirrous than they were before. The same also may be said concerning all the natural glandules in the body of man, those that serve either to excretion, to reduction, or to nutrition: They all of them vary much from their primitive tenderness and bigness, and so become more durous, and are far more consumed

sumed than they were at first; and that which the learned and most ingenious author of the late tract *de glandulis**, doth observe of the *thymus*, by the time of middle age, may be also observed of most of the other glandules in the time of extream age; that is, that they will bear very little proportion either in weight or substance, to what they did at first, but by experience they are found to shrivel and shrink away, and be consumed almost to nothing.

But of all the parts of the body, those lax and tender flakes of flesh, that lie over, and cover the bones, and are at both ends affixed to them, which from the form of some of them are usually called muscles, do most properly deserve the name of flesh, and are consequently chiefly intended in this place. These are in Scripture called the coverings of a man: *Thou hast covered me*, saith David, *in my mother's womb*, Psal. cxxxix. 13. And again *Job*, *Thou hast covered me with skin, and with flesh*, Job. x. 11. Now, as man declines in years, so do these coverings wax old and shrink, so that at length they become shorter and narrower, than that a man can comelily be wrapped up in them: So that this, together with the former symptom, doth abundantly shew the great alteration and deformity that is easily discerned upon the external parts of the body, in the time of extream age. The body becomes more uncomely, crag-

* Dr. Wharton, c. 16.

ged, and crumpled ; the bones stare through the skin ; the flesh that should cover them is wasted much away. And this condition is lively described by *Elibu*, one of the friends of *Job* ; who speaking of God's dealing with men, sometime in reference to their body (pointing therein at *Job's* consumption, which in this respect is exactly answerable to the *Marasmus senilis*,) saith, *His flesh is consumed away that it cannot be seen, and his bones that were not seen, stick out*, *Job xxxiii. 21.* I would have this expression be principally noted, and remembred, as being a most perfect comment upon these two last mentioned symptoms of age. For the former words, *viz. His flesh is consumed away that it cannot be seen*, is the same that is said in these words, *dissipatur cappar* : and the latter words, *viz. The bones which were not seen, stick out*, is the same which is said in those, *impinguatur locusta*.

And thus much shall suffice to have spoken for the explication of all those symptoms that attend a man all along the time of his decrepit state.

For man goeth to his long home : and the mourners go about the streets.

These words being not at all figurative, but only a plain and easy transition from one part of the allegory to another, namely, from those symptoms that attend a man all along his decrepit

pit state, unto those that do immediately fore-run his dissolution : It is beside my purpose to speak to them at all, for my intention hath been only to explain the difficult terms in the allegory ; And I would not willingly seem to any, *ὡς ἀλλοτρισεπίσκοπος*, to play the bishop in another's diocese, *1 Pet. iv. 15* ; or to meddle with those matters that are peculiarized to another coat, yet because the words are now read, I cannot but take notice of two things in them, that is, first, the term of long home ; and secondly, the mourning at the funeral.

The word *לָו* which intimates unto us the state of death, and is here translated *long* : hath three eminent significations, either of which may be very well accepted in this place.

In the first place it signifieth, *abditum, occultum* ; a secret and an hidden thing, and thus it is derived from the word *לָו* *Latitavit, absconditum fuit*, as it is very often used : *If the whole congregation of Israel sin through ignorance, and the thing be hid from the eyes of the assembly, Lev. iv. 13, v. 2.* And again, (not to cite many places to this purpose which were easy to do,) in the last verse of this chapter and book of *Ecclesiastes* ; *For God will bring every work to judgment, with every secret thing* ; which is from the same original word used in this fifth verse for long home. And indeed, that home that we are all hasting to, and know not how soon we may recover or come at ; and aged persons are

undoubtedly at the door of, is the true and proper hiding place for all living: *For they shall all lye down alike together in the grave, and the worms shall cover them,* Job xxi. 26. *Men are hid together in the dust, and their faces are there bound in secret,* Job xl. 13. Death is a state of obscurity, and the grave a place of secrecy; and therefore it is that *Job*, wishing for death, phraseth it; *Oh that thou wouldest hide me in the grave, that thou wouldest keep me in secret,* Job iv. 13. But beside the bare signification of secrecy, this word doth for the most part carry along with it an intimation of duration or continuance; and therefore may very well be translated, *tempus cujus duratio est abscondita*, an hidden duration, a time that no man knows how long; which is exactly answered by our *English* Lawphrase, *time out of mind*; and that both *à parte post*; and *à parte ante*; time either that is past, or that is to come; of which no man can give an account: Both which also are signified unto us by the *Latin* word *olim*, which without all question came from the *Hebrew* word we are now speaking of, *Ecc. i. 10*; as both the sound and signification will abundantly make appear: Now this duration at least is in the state of death, that no man knows how long it will continue: No one living can give an account how long it shall be before the earth shall disclose her blood and her bones, and shall no more cover her slain.

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The second signification of the word is *ævum*, *seculum*, an age, a certain long space of time, that is commensurate with the duration of the thing that is spoken of; a perpetuity (as I may so say) that is circumscribed; an everlastingness that lasts as long as the thing of which it is affirmed: It is said of an *Hebrew* servant's refusing to go out free, *His master shall bore his ear through with an aul, and he shall serve him for ever*, Deut. xv. 17; Exod. xxi. 6. And again, when *Hannah* resolved to present her son *Samuel* to the Lord, she saith, *I will bring him that he may appear before the Lord, and there abide for ever*, 1 Sam. i. 22. 28. which term *for ever* is afterwards explained, when she doth bring him and present him; then she saith, *I have lent him to the Lord as long as he liveth*, 1 Sam. xxvii. ult. Now in this sense also may the word be taken in this place, so long as death lives (and it is the last enemy that shall be destroyed) it will keep in its possession all that it hath, or shall surprize: The graves must be our homes, when once we come there, as long as there is any dust to cover us, or heavens to surround us. *Man lieth down and riseth not, till the heavens be no more, they shall not awake, nor be raised out of their sleep*, Job xiv. 12. Until the grave shall not only cease from craving, but from being; and until death be wholly swallowed up of victory, all those bodies that are under their

their power, must there quietly remain, as in their own unalterable habitations.

The last signification of this word is *duratio absolute infinita, æternitas*: A compleat and absolute perpetuity, eternity. And in this signification it is mostly used, and must always be interpreted when it is applied to God, or any of his attributes, as often it is. When *Nebuchadnezzar's* understanding was returned to him, he blessed the most high, and praised and honoured him that liveth for ever, whose dominion is an everlasting dominion, and his kingdom is from generation to generation, Dan. iv. 37. Again, it is said in *Isaiah*, *Israel shall be saved in the Lord with an everlasting salvation*, Isa. xlv. 17. Now in this last sense also may the same word in this place be safely taken; *in domum æternitatis suæ*. The state we arrive at, by death, is an everlasting state, and we shall never return to this life again through all eternity. And hence it is, that usually we find such epitaphs; *hanc æternam sedem sibi posuit*: and

Hæc domus æterna est, hic sum situs, hic ero semper.

Nor is the scripture without its testimony hereunto; for *David* saith, *Spare me a little that I may recover strength before I go hence and be no more*, Psal. xxxix. 13. And *Job* doth not only say it, but argue upon it: *There is hope of a tree if it be cut down, that it will*

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sprout

sprout again, and that the tender branch thereof will not cease. Though the root thereof wax old in the earth, and the stock thereof die in the ground: Yet through the scent of water it will bud, and bring forth boughs like a plant: But man dieth, and wasteth away; yea man giveth up the Ghost, and where is he? Job xiv. 7, 8, 9, 10. And that interrogation, If a man die shall he live again? ver. 14. which usually is interpreted vehemently to affirm; seems on the contrary to me, most earnestly to deny, and is as much as to say, if a man die he shall never live more, no hopes of a return to this life again: And this,

First, the manner of proposing the question seems chiefly to intend; for it is not negatively proposed; If a man die shall he not live again? but affirmatively, shall he live again? Now negative interrogations do in all languages, and in scripture phrase too, more properly intend affirmative propositions, as where it is said, Doth not each of you, on the sabbath day loose his ox, or his ass, from the stall? and ought not this woman also to be loosed? Luke xiii. 15, 16. both of them most vehemently affirming: and again, another interrogation; How shall he not also with him give us all things? Rom. viii. 32. is as much as to say, he shall most surely do it. On the other hand, affirmative interrogations do for the most part intend negative propositions: Joseph saith, How can I do this great wicked-

wickedness and sin against God? Gen. xxxix. 9. and the Lord saith, *How shall I give thee up, O Ephraim? how shall I deliver thee, Israel? how shall I make thee as Admah? how shall I set thee as Zeboim?* Hof. xi. 8, 9. all of them intending the denying of the thing: Both these Interrogations, about the same subject too, are together in one verse of the *Psalms*, still intending their contrary propositions; *What man is he that liveth, and shall not see death? shall he deliver his soul from the hand of the grave?* Psal. lxxxix. 48. the first part of the verse is negatively proposed, and therefore signifies the strong affirming of the thing, he shall surely see death: and the latter part of the verse is affirmatively proposed, and therefore signifieth the vehement negation of it; he shall in no wise deliver his soul from the hand of the grave: The manner therefore of proposing this question being without a negative, doth seem to carry the sense, that if a man be dead he shall never live again.

Secondly, The inference that is hence made confirms the same thing; *All the days of my appointed time will I wait till my change come;* doth far more naturally and powerfully proceed from the denying of life again, than from the asserting it, as to the diligent observer will easily appear: if a man shall never live again in this world, it is of most high concern to prepare for that change that foreruns an everlasting state. There is no returning more

from death, and therefore let every one wait upon his business, and finish it, before that time come: *There is no work, nor device, nor knowledge, nor wisdom in the grave, whither we are going*: And since there is no returning thence from, how cogent will the argument be, for every one to wait all the days of his appointed time, till his change shall come? *If the tree fall to the south, or to the north, in the place where the tree falls, there it shall be*, Eccles. ix. 10. And therefore it is of the greatest concern to take care how the tree fall. If a man at his departure out of this life fall towards happiness, or towards misery, in the same condition he falls, shall he remain for ever; and therefore it is a business of everlasting concern, to await our fall.

But lastly, That which makes it yet more clear, that this interrogation intends the negative, is the words in the latter end of this chapter; where *Job* resuming the subject, and summarily declaring what he had been before speaking of; he saith plainly, *Thou prevailest for ever against him, and he passeth, thou changeest his countenance, and sendest him away*, Job xiv. 20. I speak not these things in the least to enervate that most comfortable christian doctrine of the *resurrection*; and as *Job* was very careful in the forecited chapter, to keep his reserve as unto that; so that in the midst of the chapter (that therefore it might have an aspect over

over the whole) he interposeth a sentence to that purpose; *Man lieth down and riseth not, till the heavens be no more, ver.*

12. So I would not have any one so far mistake the doctrine, as to think the body of man shall be kept in everlasting chains of darkness: for, though it shall never return to this working state again, yet God hath appointed a set time, to remember it in, *ver. 13.* at which time it shall, by the word of God, shake off its corruption, dishonour, and weakness; and by his gift shall be cloathed with spirituality, glory, and immortality, *1 Cor. xv. 41, 42.* Herein no one can err, who knows the scripture, and the power of God, as our Saviour intimates; the power of God teacheth us, that God can raise the dead, *Mat. xxii. 29.* and the scriptures teach us that he will; and what God can, and will do, must certainly come to pass: But the doctrine of the New Testament gives a far clearer light hereunto; therein there is a sufficient testimony given unto all men, *in raising Christ from the dead, 1 Cor. xv. 23.* For he being the first fruits of them that sleep, gives a certain demonstration, that all the other also must follow in their order. *Ἰησοῦς* and *ἀνάστασις*, *Acts. xvii. 18.* are so nearly related to each other, that they are preached and believed, they are slighted and contemned together: their foundation is so much the same, that they must necessarily

stand and fall alike. I have observed that those late spreading doctrines that have purposely obscured the history of *Christ* at *Jerusalem*, have, before they have been aware, wholly lost the doctrine of the resurrection: I shall not farther add hereunto; it may seem that I have too much digressed already; but I hope no farther, than for the necessary clearing of the words *long home*, and the reserving entire that unquestionable article of our faith, *the resurrection of the body*.

The other remarkable thing is the mourning at the funeral; I shall not spend time in discoursing what kind of mourners these are; whether children, relations, friends, neighbours, hired persons, these, or any, or all of these; it is enough that there is a publick mourning expressed, at such a funeral as this; I say *it is enough*, and methinks I hear some others say, *it is too much*; for if it be so, as hath been related, if age be so miserable and comfortless a condition as hath been described; happy sure are they that are gone, or going, off from it: If all manner of evils do attend those that are extremely aged, and nothing that good or pleasurable is; when they change this state, for that which is perfectly happy (as we ought to believe concerning all our christian friends departed) instead of mourning, why should there not be rejoicing? instead of hanging down the head and weeping, why should

should there not be lifting up the head and triumphing? at so great a bettering their condition, as such a change must necessarily produce: To this I must needs answer, That, if we truly understood ourselves, and were thoroughly possessed of what we do profess, in respect of the party deceased, there were no cause of mourning at all, but rather of rejoicing; and this not only in respect of persons decrepit with age, but of any other, in whatsoever flourishing condition of this life; for the change would then be, but from a less miserable estate, to that which is most compleatly blessed: for man, at his best estate, as he is altogether vanity, so he is very miserable, and encompassed and perplexed with abundance of evil, which his last happy change gives him a deliverance from for ever. *The righteous are taken away from the evil to come,* Isa. lvii. 1. and the state they are taken to is infinitely and unexpressibly happy. Most noble and excellent was that saying upon a moral account; the self-same journey that thou hast taken from no being, unto being, and from a pre-existent being, to this mortal life; thou mayest again take (with the same assurance of preferment) from this life, by death, to a life that has immortality in it: but the believer in *Christ Jesus* only, hath a true prospect of the advantages of his great change: the life of Christ, and the gain of death,

death, are known and apprehended together: *For to me to live is Christ, and to die is gain,* Phil. i. 21. He that hath lived unto the Lord knows full well, *That when his earthly house of this tabernacle shall be dissolved, he hath a building of God, an house not made with hands, eternal in the heavens,* 2 Cor. v. 1. He assuredly knows from the prelibation of eternal life, which he hath had in this world, that then all tears shall be wiped away from his eyes, and he shall never know one evil more, and that he shall be put into immediate possession of all those good things, that he either prayed, or hoped for in this life, into a perfect state of blifs, infinite, at least, for the duration: And therefore upon this account, there will be very little cause of lamentation. And, whosoever he is that mourns merely upon the account of the party deceased, he doth necessarily redargue himself of unbelief, and plainly shew, that there is an hesitation in his mind, concerning one of these two things; whether heaven be such a place as hath been described unto us in the book of God, or whether his friend be assuredly gone to that place. So that funeral mournings are, as divines say of funeral sermons, more in respect of the living than of the dead. To go unlamented is no misery to the dead; but a shame to the living. There doth indeed lie a duty upon all that are left behind, to bewail their own

own loss of their godly friend; natural affection, and the fleshly part of man ought something to be indulged in this respect; but the loss of a great and a long example of piety, whose presence hath been a continued blessing, both to persons and places; ought most seriously and sadly to affect the inward man; and therefore they are sharply reprov'd by the prophet, who are negligent in this duty; *The righteous perisheth, and no man layeth it to heart; the merciful men are taken away, none considering, &c.* Isa. lvii. 1. And it is to be observed, that the saints of God, though never so old, and brought never so low, through the miseries attending them; when they changed this life for a better, were still buried with great lamentation, *Gen. l. 1 Sam. xxv. 1. Num. xx. 29. Deut. xxxiv. 8.* *Abel-mizraim* was a place never to be forgot, either by the Egyptians, or the Canaanites; and not *Jacob* only, but *Moses*, and *Aaron*, and *Samuel* were buried by the assembly of the people of *Israel*, and very great publick mournings were made for them all.

VERSE 6.

*Or ever the silver cord be loosed, or the golden
bowl be broken, or the pitter be broken at the
fountain, or the wheel broken at the cistern.*

THUS far the king hath been treating of all those symptoms that accompany a man all along his decrepit state, which may appear upon him while yet he may have some space given him to remain in the land of the living : These that follow in this verse are such that immediately forerun his dissolution ; which when they once appear, there remains nothing, but a present preparation for his funeral. And they may serve as indications, not only in this weak and spent condition of age ; but in whatsoever other condition of man's life, by the violence of a disease, they are jointly found ; they give a most certain prognostick of approaching death. In the explication whereof there is very much variety of opinions ; so that it would be exceeding tedious and troublesome to follow them all ; but I shall spare all that pains, and take notice of none of them, but what I judge to be nearest the intention of the wise man, forasmuch as most of the other, carry their own refutations in their faces : and if I may be directed to find out any thing of truth contained in them, that also will bear its own evidence

dence along with it, and may serve for eviction of whatsoever is contrary thereunto. Forasmuch as *rectum est index sui, & obliqui*. Death, which is the fruit of old age, and the unavoidable receptacle of all living, is described to be just at the deor, by those symptoms that belong to the instruments, either of the animal faculty, or of the vital; (as for those that belong unto the natural, they have very little or no certainty in this case.) Those that belong to the animal, have reference unto the brain, and the parts arising from it; either as they are continued without the *cranium*, or *ever the silver cord be loosed*; or else as they are contained within the *cranium*, *the golden bowl be broken*. Those symptoms that belong to the vital faculty have reference unto the heart, and the parts arising from it; as they serve either for importation of the blood and spirits, *the pitcher broken at the fountain*; or for exportation of the same, *the wheel broken at the cistern*. Now of all these in their order.

Or ever the silver cord be loosed.

The first thing that we must here make enquiry into, is what we are to understand by the cord; and we must be sure here also, as in all other parts of the description, to keep within compass of the allegory; and find out those parts of a man that are hereby represented. For he it is, that hath hitherto been

described unto us, as an old house greatly decayed and ruinated, but yet standing, by all the foregoing symptoms ; but now as an house falling down, which must no longer remain, by this symptom, and those three which immediately follow in this verse. And therefore these may very well be called, *quatuor mortis concomitantia* * ; the four attendants upon dying man.

The scripture maketh mention of the *cords of a man*, Hof. xi. 4. which although they are there to be taken in a moral sense, and so excentric to what we are now about, yet they are a metaphor taken from the natural cords of a man, and may give some light thereunto : for as love in all bodies politick (and consequently mystical) doth both draw and unite ; so in all bodies natural, the self-same offices are performed by those parts of which we are about to speak ; for we must know, that all the several parts of man are not kept, and bound fast together, by spells ; nor are his several members moved several ways, as it were by magick art ; the soul of man doth not by a bare *jubeo* cause the representation of outward objects, or the variation of the position of the several limbs, without the help of instruments ; but by the apt frame of the whole body, and the pliability of the several parts, and the convenient position of all the

* *Cajetan.*

the cords and pullies towards the appointed ends; we perceive outward objects, and move ourselves at pleasure, so as that an artificial man, could there be in it the same organs, and the same disposition of them all, together with an active power to put them in execution would have a like sense and motion with ourselves. The *Chaldee* paraphrase doth interpret this cord to the *ligula linguæ*, the string of the tongue; others interpret it to the *spinalis medulla*, the marrow of the back; others, to the nerves; others, to the outward tunicle of the nerves and marrow, which they have proper to themselves, for their own strength; beside the other two which they receive from the brain. All these have offered exceeding well, and without doubt have hit the truth, and being put together may seem to make the whole of what is here intended, which is the whole instrument of sense and motion, after it hath proceeded out of the scull, and as it is distributed throughout the body; with all its coats and tunicles, with all its divisions and separations. I mean, not only the spinal marrow is here to be understood, (as principally it ought to be) but all the nerves arising thencefrom, (both those seven pair, be they more more or less, that proceed from it, before it hath attained any of the spines; and those thirty pair, that proceed from the several *vertebræ* of the neck, the back, the loins,

loins, and the *os sacrum*) and also the filaments, and fibres, and tendons, that proceed from all those nerves. The nerves and fibres must in no wise be here left out, forasmuch as they do more apparently both unite and draw, than any other of the parts whatsoever. *Job* saith, *thou hast fenced me with bones and with sinews*, *Job* x. 11. I compare these fences of a man, to those of an hedge; where the bones answer to the stakes in the hedge, making the substantial trunk of the body, unto which all the other parts are to be fastened: and the sinews or nerves to the binders of the hedge; which fasten and unite all the others parts to that trunk: and as for motion or drawing, it is well known that there is none in all the body performed, (whether voluntary or natural) but by the influence of the animal spirits upon the nerves and fibres, and their contraction thereupon, in those several parts, into which they are inserted. Now, altho' all the several and innumerable filaments are to be accounted hereunto, yet, they are most aptly expressed in the singular number, by *funiculus argenteus*, the silver cord, because they are but the continuation of the same thing: The fibres being nothing else but the nerves divided and dispersed, and the nerves nothing else but the marrow in like manner separated, as so many arms and branches of the same tree; they are

all one in their original, the brain ; they are all one in their continuation for a long time, in the spine ; they are all one in their colour, white ; they are all one in their form, long and round ; they are all one in their coats, having each the same three tunicles ; they are all one in their use, to convey the animal spirits, and all this is an apt resemblance to a cord ; to which also they are not unlike in their division, for then they are but as so many wreaths, or wattles of the same cord ; and that which is most observable to our present purpose, is, that by how much the more distant they are from their original, by so much the thinner and finer, the harder and more compact do they grow, like the several smaller and better twisted ends of the same cord.

It is called the silver cord, first from its colour, for it appears to the eye, of a white, shining, resplendent beauty, bright as silver ; and thus it is even when it is taken out of the body, after it is dead ; but how much more admirable and glorious must it needs be, while it remains in the body yet living, and actuated with abundance of most refined spirits, which continually ascend and descend thereupon. An ancient and an admirable anatomist *, upon consideration of the great lustre and perspicuity of it, compares it to the crystalline hu-

mour
Fallopian.

mour of the eye, and farther affirms, that he never saw any thing in all his life, more beautiful than those two things.

Secondly, It may be called the silver cord, from its place in which it is seated in the body: it is placed very deep, secret, and secure; *Job* saith, *Surely there is a vein for the silver*, *Job* xxviii. 1. that is, there is an intricate, hidden, and mysterious cavity in the earth, in which this lunar mineral doth more securely pass its branches; just thus the cord of our body, as soon as ever it hath left its original, it is passed into the most inward and secret cavity of the spine, which by reason of that admiration and reverence the ancients had for it, they called, *ἁγία ὀπίρρα*, the holy pipe; and when in several places it passeth thencefrom, it is conveyed all along with wonderful artifice, both for secrecy and security, which is continued to the most minute filaments; for throughout the whole body, it lieth lower, and deeper, and safer, than the veins, or arteries, or any other common conveyers in the body of man.

Lastly, and chiefly, It is called the silver cord, because of its excellency: For as silver above all other minerals whatsoever (save only that most absolute and perfect one of gold) is, and ought to be most valued and esteemed; so is, and ought, this part we are now speaking of, next unto that most absolute and perfect

fect part, the brain, which in the very next following symptom is assimilated unto gold. The ingenious chymists take pleasure to liken the several metals they find in the bowels of earth, to the heavenly luminaries, who after they have compared the most perfect, aptly to the sun; they in the next place, liken this of silver as aptly to the moon, and therefore decipher it also by the self-same character; shewing us hereby, that as the moon in heaven is far more glorious and excellent, than all other celestial bodies whatsoever, (the sun alone excepted) so silver in the earth, above all terrestrial bodies whatsoever (gold alone excepted) hath the same pre-eminence.

Micat inter omnes,

—Velut inter ignes,

Luna minores.

And this dignity hath the spinal marrow with all its branches above all other parts of the body, except the brain; it hath been in such esteem among philosophers*, that the best of them hath acknowledged it the foundation of life; and the great master of physicians hath dignified it with the name of *αἰών*, thereby clearly intimating, that if vitality be not chiefly therein placed, yet the highest and most noble operations thereof are performed thereupon. And such an exact likeness there

* *Plato in Timæo. Hippoc.*

is between the nerves and silver, that they do by a mutual and reciprocal metaphor, suitably express one another, in the two several worlds.

For as the nerves or sinews are here said to be the silver of the microcosm, or little world; so is silver as aptly said to be the sinews of the macrocosm, or greater world. There being nothing in the whole world that is vigorously carried on among men, but by the help thereof: silver is the sinews of war and of peace, of merchandize and of tillage; nay, I may farther add, of learning, and of virtue too.

*Quis enim virtutem amplectitur ipsam
Præmia si tollas.*

Now, as all the works of the greater world soon come to nought, if the influences of the sinews thereof be intercepted; so do all those of the lesser world, if the silver thereof perish and decay; and therefore the loosening of the silver cord is here given as an undoubted sign of instant dissolution. For, as it was said of the tabernacle, *That it was spoiled, and near its utter ruin, when the cords thereof were broken,* Jer. x. 20. Isa. xxxiii. 20. so may it also be said of this earthly tabernacle of our bodies, when we shall be unstrung, and the cords of our bodies broken asunder; we must then expect suddenly to be dissolved: The word here

is variously translated, *rumpatur*, *elongetur*, *contrahatur*, *revertatur*, *dissolvatur*; which variety may give very great light unto the several causes of the symptom here intended: but because such a narrow scrutiny may make a digression from what is here intended, I shall for the present pass it by, and only take notice of the symptom itself which is here aimed at; and, that the *Latin* word *dissolvatur*, and the *English* *loosened*, do directly point at, namely, the solution of the nerves or marrow, called in *Latin* (from the *Greeks* and their radix λύω, *solvo*) *paralysis*, and in *English* the *palsy*: Sometimes this solution happeneth only to one part of the silver cord, which causeth *paralysis particularis*, and then the enlivening influence of the animal spirits is hindered only from those parts of the body, to which that doth immediately tend, and so those parts become wholly deprived both of sense and motion; death hath already taken possession of a leg, or an arm, or the half of that man, that is so far paralytick, hardly or never more to be dispossessed; and therefore in our language it is well stiled the dead palsy. Sometimes it happeneth to the head of the spinal marrow, and so hindereth the influence of the spirits upon the whole silver cord, and consequently takes away all sense and motion from all the subjected parts; and this causeth *paralysis universalis*, which at all times and upon all occasions, gives a very probable

bable prognostick ; but in the decrepit age of man, a most certain and infallible one, of immediate death.

Or the golden bowl be broken.

The symptom last treated of, had reference to the *rivulets* of animality ; this we are now speaking of relates to the *fountain* : For we must know that the soul of man, the queen regent of all his operations, makes the head the royal palace of her residence, from whence she gives forth all her precepts, edicts, and commands, for the regulating and actuating all the subjected parts of the body. Now the parts of the head are of two sorts, either the *containing*, or the *contained* parts thereof : The last of these, namely the encompassed, or contained parts, are the *cerebrum*, the *cerebellum*, and the *medulla*, with all those several smaller parts, which curious observers have found out to belong to any of them ; which I shall not so much as mention, because they are not so directly pointed at in this place. And I do here, as I have done all along, industriously avoid all things, especially all terms of art, or second intentions, that do not immediately conduce to the understanding of the symptom under hand : But we must not so exclude these parts as to judge them not all concerned in this expression ; for upon the breaking of the golden bowl, the brain itself, with all the contained parts appertaining

pertaining thereunto, doth immediately cease from all its operations : And if we shall take the original word in its plain signification, and as it is often used in scripture too, *Cant.* iv. 12. *Judg.* i. 15. for *fons*, or *scaturigo*, a fountain, or spring ; it would seem most properly and primarily to intend this most noble part, the first spring of animality, the original fountain of all sense and motion.

But because I find the word otherwise translated, and that upon very good grounds, by all that have undertaken that charge, I shall in no wise dissent from them ; for indeed the mystical and metaphorical sense of words ought still to be preferred all along the allegory : And I would not by any means break a firm, well set, and a lasting hedge, if there be any the least reason for the standing of it. The root from which this word is derived is רָרַל *volvit, circumvolvit, complicavit, circumduxit* : Sometimes it is translated to rowl, or to rowl together ; sometimes to rowl away, or to rowl back ; sometimes to rowl over, wrap up, or encompass : so that the word in the text is sometimes translated *lecythus*, a pot, or bowl, *Zach.* iv. 2, 3. to hold any liquid substance in ; sometimes *lenticula*, a chrismatory, or cruet, or vessel to contain oil ; sometimes *orbis*, a spherical body encompassing others, *1 Kings* vii. 7, 41. The vulgar *Latin* removes the metaphor once again, and brings it home to its own door ; *vitta aurea*,

aurea, the golden headband ; for *vitta* signifieth a veil, a coif, a garland, or whatsoever else may circle or encompass the head : the LXX. hath it ἀνθήμιον, the repository of the brains ; by all these we understand, that interpreters do *uno ore*, with full consent, render the word to the involving, circumscribing, encompassing, containing parts.

Which also are of two sorts, either the external containing parts of the head ; or the internal : the external (beside those common vestments that appertain to other parts of the body also, as the *cuticula*, *cutis*, &c. which cannot be here understood) are only two, the *pericranium*, and the *cranium* itself ; now although these are not chiefly intended in this place, yet surely they will put in for a share of this eulogie ; forasmuch as these do environ, defend, and suspend all the inward parts, and do consequently exceedingly conduce towards all animal operations. And the *Chaldee* paraphrase doth directly interpret this word hereunto, when it saith, *et ne sit confractus vertex capitis tui* ; the crown of thy head be not broken : beside the *Hebrew* word for the scull (as it is used in that place with many others, where it is said, when they went to bury her, they found no more of her than the scull, and the feet, and the palms of her hands, *2 Kings* ix. 30. *Judg.* ix. 53.) is very near a-kin to the word here in the text ; they lie both together
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in a belly, and are derived from the same stock. And that famous word which is a medly of the oriental languages, being partly *Syriac*, partly *Chaldee*, and partly *Hebrew*, is also nearly related hereunto; I mean the word *Golgotha*, that is to say the place of a scull, Mat. xxvii.

33.

The internal containing parts are also two, those two membranes, namely a thicker and an harder; a thinner and a finer, that do yet more immediately encompass the brain, which to the *Grecians* are known by the name of *μενίσγες*, to the *Latins* by the name of *matres*, which title they took from the *Arabians*, intimating thereby unto us, not only that they do give a being to all the other membranes of the body, as unto their own natural off-spring, but chiefly, and that which is most to our present purpose, that they do *maternâ curâ cerebro prospicere* *, with a motherly care and tenderness over-see and over-rule all the actions of the brain: but yet more particularly, the most inward of these two, that doth by immediate contact encircle the very substance of the brain, doth seem to me to be *καλὴ ἐξοχή*, by way of eminence, the golden bowl here intended. This is that part which deeply insinuates itself into all the anfractuous passages of the brain; and, being firmly annexed there-

* *Spigelius.*

thereunto, keeps every part thereof in its proper place, and due texture; so that whatsoever is performed within the whole compass of the brain, whether the making of the animal spirits, their exercise therein, or their distribution thencefrom, is done principally by the help of this membrane: Therefore the ancients, from that reverence they had for it, have justly honoured it with the name of *pia mater*. And if we do but thoroughly consider the innumerable branches of the veins, but especially of the arteries that are hereinto inserted, and their several wonderful interchafings, and intermixtures, and insertions, not only one into another, but even among themselves (which is not found in any other part of the body) we shall surely be induced to believe, that the greatest depuration and defæcation, and consequently the highest exaltation of the blood and vital spirits is performed herein. And though it pleaseth the most worthy, and most learned author * of the anatomy of the brain, to give the honour of making the animal spirits, to the *substantia corticalis cerebri*; yet if you well weigh the doctrine there delivered, you will find it clearly evinced, that the greater work is done before; and that the *substantia corticalis* doth but midwife that into the world, which the *pia mater* conceives in its own bowels.

Portio

■ Dr. Willis.

Portio sanguinis subtilior (nempe talis facta in vasis hujus membranæ) hic (nempe in substantia corticali) rude donata, in spiritus animales facessit.

Now whether the purification and spiritualization, or the manumission or liberation, be the most noble work, I think it no hard matter to determine.

It is called the *golden* bowl, for the self-same reasons for which the other was called the silver cord. First, in respect of the colour, not only because that most precious and deep coloured liquor of life is abundantly contained in the vessels of this membrane, but chiefly because the membrane itself is somewhat of a flavous colour, and tends more towards that of gold, than any other part whatsoever. Again, as *there is a place for gold where they find it*, so there is an hidden, secret, and well defended place, where this precious part hath its natural residence; much industry must be used for the finding out, and yet much more for the following of it, and tracing it, into all those secret caverns, into which it doth most mysteriously diffuse its branches; but chiefly it is so called from its excellency, and its universal use. The instrument that doth depurate the best of blood, and defæcate and exalt the vital spirits, and so prepare them for animality, can be likened in this lower world, to nothing, but that most absolute, and perfect, that best concocted and most exalted mineral of gold. When the Lord

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God had made the whole creation, he in the last place makes him, for whom all the rest were made; *And he took man and put him in the garden of Eden, to dress it, and to keep it*: This place, of all the earth, was the meetest receptacle for so noble an inhabitant, *for it had in it a river, which was divided into four heads, the name of the first is Pison, which encompasseth the whole land of Havilah, where there is gold*, Gen. ii. 10, 11; and all the other are there reckoned up by their names: When the Lord God had made this noble inhabitant of the dust of the earth, he in like manner in the last place breathed into him that more noble part of him, for which all the rest were made; and the soul of man, which is to rule and guide him, hath he placed in this most convenient seat, which is watered by a river, that is parted, and becomes four heads, which are all known by name, where also there is gold. *Arteriarum quadriga ad quatuor distinctas τὰ ἐγκεφάλου, plagas evehitur**; the two carotidal, and the two vertebral arteries are this golden quaternion, whose streams make glad that city, wherein the breath of God hath its principal abode. There is yet another thing, wherein this part we are now treating of, and gold, have a very great resemblance; and that is in the ductility of them both: Gold of all metals is the most ductile, and may be drawn out at the greatest length; this only makes
good

* Dr. Willis, Anatom. Cerebri, Cap. 10.

good that maxim in philosophy: *Quantitativum est divisibile in semper divisibilia*; no man can draw gold so thin, but a better artist, can yet make it thinner; it is the nature of this solar mineral to be endless in purity: how pure fine the *pia mater cerebri* is, none can express, and none but the diligent observer of it, (who hath often endeavoured its separation from the parts to which it is annexed) can possibly understand. This, as so much leaf-gold, drawn out to a very great thinness, doth securely, tenderly, and universally wrap up all those little hills and valleys, those convex, or concavous parts, that are within the compass of its own circumference.

This golden bowl, so long as man remains in his strength, is firmly knit unto itself in all its parts, but in the extremity of extream old age, when he is just giving up the ghost, it can no longer continue its continuity; but, by reason either of its natural driness, shriveling into itself, or preternatural moisture, imbibing excrementitious humours till it is over-full, it often snaps asunder, and so recurs into itself, as the word properly signifieth; from whence the brain must necessarily subside, and all the parts serving in any wise to animality must be suddenly and irrecoverably smitten, and cease from their several uses; and moreover, immediately hereupon followeth a change of the whole countenance, the nose appears very sharp, the eyes

sink into the head, the temples are pinched in, the ears become cold and contracted, and the fibres thereof inverted, the skin about the forehead hard, intense, and dry, and the colour of the whole face livid and black, and in all things perfectly representing, that *ultimum vale*, known among physicians by the name of *facies hippocratica*, and so consequently the man doth immediately die apoplectical; according to that of *Job*, *Thou changeest his countenance*, (and what followeth immediately thereupon,) *Thou sendest him away*. So that the symptom hereby intended, is, *Repentina omnium operationum cerebri; motus, viz. sensus, & aliarum functionum animalium, tam principalium, quam minus principalium abolitio: cum facie hippocratica*.

It cannot but here upon this occasion be remembered, that an apoplexy was mentioned before, in the explication of the second verse, and that as a disease of old age, which might surprize a man, and yet not immediately kill him, and of which there might possibly be a removal, at least for a season, that there might some space be given him to recover a little strength, before he go hence and be no more seen; how therefore comes it to pass, that it is here accounted as one of the immediate harbingers of death?

For answer hereunto, we must know, that an apoplexy falls under a double consideration; either as it is a disease, or as it is a symptom.

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In the first consideration, it is *morbis conformationis respectu meatuum*; when by reason of some preternatural matter, in, or about the vessels, there becomes an obstruction, constipation, or compression of them, so that either the vital spirits cannot be received, or the animal spirits cannot be exercised or distributed as they ought to be. This matter may sometimes possibly be discussed, or carried off for a season, or change its seat, and so the apoplexy degenerate into the palsy; however it is not an infallible sign of instant departure, and under this consideration it was handled in the second verse. But in the second consideration it is *symptoma morbi, nempe solutæ unitatis*; when by reason of the breaking of the golden bowl, and shrinking up into itself, there immediately follows a coalescence of all the vessels thereof, and a subsidence of the brain itself, and consequently, a total abolition of all the actions of the animal faculty, from whence there is not so much as the least hopes of recovery; and under this consideration it is handled in this place. Or it may be, the distinction of the learned *Nymmanus**, may be more satisfactory to some in answer to this objection.

Apoplexia est vel vera vel notha. A true apoplexy is when the *meatus* and open passages of the brain are shut up and obstructed, and so the communication of the spirits is intercepted, the substance of the brain, and of all the parts ap-

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pertaining

* *Nymman. de Apopl. cap. 21.*

pertaining thereunto, remaining otherwise in good plight, as they ought to be, in their due place, with their wonted firmness of composition: And this is like unto an house, whose entry or common passages are wholly filled up with rubbish, so that it becomes altogether useless, and this is the disease of old age before-mentioned. But a *bastard apoplexy* is a far more dreadful thing, when the tone of the brain, and of all the parts within the compass of the *pia mater*, is wholly relaxed and destroyed, and by consequence only thereupon all animal functions do in a moment cease, in the manner of the true apoplexy, but yet with far more terrible and amazing symptoms, the pulse and respiration also being wholly taken away, and the countenance changed to that ghastly aspect before mentioned; which is an infallible sign of the dust immediately returning to the earth as it was, without any the least stop in its course; λύνειν ἀπωλεξίαν ἰσχυρὴν μὲν ἀδύνατον*. And this is like that house wherein the Philistines were gathered together to see *Samson* make sport, which came tumbling down, when the two foundation pillars thereof were violently torn from their place; *Ut collapsa ruit domus, subducta columnis*; and this is the certain symptom of death, treated on in this verse. And thus much shall suffice to have spoken for the explication of those symptoms of death, that belong to the
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* *Hippo. l. 2. Apho. 42.*

instruments of the *animal* faculty ; those two that remain belong to the *vital*.

Or the pitcher be broken at the fountain.

For the right understanding of this sentence, and that which follows, which doth depend hereon, both of them belonging to the vital faculty, I must crave leave to premise something concerning the life of man, wherein it consists ; and what those parts are, that do principally conduce to the production and preservation of it ; for otherwise it is impossible to understand these symptoms. For as the prophecies of *Daniel* and most others of the latter times, are *closed up and sealed till the time of the end*, Dan. xii. 9, when their known accomplishments shall demonstrate the truths contained in them : Just thus hath it happened to the great mysterious truths contained in these two last expressions ; forasmuch as the frame, action, and use of the heart, together with the true motion of the blood in man's body, hath lain hid from the time of *Solomon* throughout all generations, unto this last wherein we now live ; the words of this allegory that contain the sum of that doctrine, have all this while been an undiscoverable mystery, as a book sealed up, that none could read or understand. And as all those who have endeavoured to reveal the revelations, that must remain unrevealed till the appointed time of their revelation, have by all their in-

dustry only declared their own weakness and insufficiency for such a work ; and describing at the best rate they could the mystery of *Babylon*, by their darkness and confusion, have only evinced that they themselves were a part thereof ; even so all those that have undertaken the explication of what we are now about, before the doctrine of circulation was received among men, and gave light to the world, have, with their utmost endeavours, only declared their own inability, and have left these two enigmatical symptoms far more intricate than they found them ; and of all those ancient commentators and criticks that I have seen upon the place (which has not been a few) I never had the least content in any, but one ; and that is he, who, after he had set down the four symptoms in this last verse, subjoins as his comment these words, *hæc quatuor ego non intelligo*. Most ingenuous *Castilio* ! had all interpreters been so plain and honest, I persuade myself we had had lesser volumes, and yet far better understanding of the sense of scripture, than now we have.

Now, in order to the end proposed, we must know in the first place, that which the scripture doth far above all other writings most clearly declare, and that is, that the life of a man consists in his blood. For *it is the life of all flesh, the blood of it is for the life thereof ; therefore I said unto the children of Israel, ye shall*

shall eat the blood of no manner of flesh, for the life of all flesh is in the blood thereof, Lev. xvii. 13, 14. And this most noble liquor of life hath a primary seat or fountain, where it is principally made, and from whence it is dispensed throughout the whole body; and this is none other than the *heart*; for *out of it are the issues of life, Prov. iv. 23.* is a truth not only moral and spiritual, but natural also. This part continually issueth forth abundance of blood, wherein is the life, to all the parts that are to be quickened thereby. Hence those medicines that are of a quickening and enlivening virtue, are not unfitly called *cordials*, because they help the heart in its work, and do that by art, unto which the heart is by nature appointed: And surely between them there is a very great resemblance, which makes the wise man say, *A merry heart doth good like a medicine, Prov. xvii. 22.* This wonderful part of man hath abundance of the wisdom of the creator shewed in its formation, in so much that none is able fully to comprehend it, for *it is exceeding deep, Psal. lxiv. 6.*

And that which is said of the king's heart, though in another sense, may as truly be said of man's heart in general, *The heart of man is unsearchable, Prov. xxv. 3.* Yet thus much cannot but be observed by all those that take pleasure in searching out this great work of

God, that it is the fountain of life, the first living, and the last dying part of man, and that it doth communicate of its life and vigour to all the other parts of the body, tho' at the extremest distance; which live or die, according as the beams and influences of this glorious sun of the body are communicated unto, or intercepted from them. It is said of *Nabal, his heart died within him, and immediately he became as a stone*, 1 Sam. xxv. 37. if the heart give not forth its vivifying virtue, the flesh doth immediately fail; and there is no fear of the latter, if there be a continuation of the former, for *a sound heart is the life of the flesh*, Prov. xiv. 13. *My son give me thy heart*, saith Solomon, Prov. xxiii. 26. intimating that that was virtually a gift of the whole. The sovereignty and principality of the heart, above all the other members of the body, might be abundantly confirmed from scripture, but what hath been said may suffice: Yet there is one place relating more particularly to the action and use of the heart, that I would especially note; and that is in our *English* books, *My heart is inditing a good matter*, Psal. xlv. 1. But here, as in many other places the translation comes very short of the original, and so the whole strength of the metaphor is lost. *לִבִּי*, the word is not elsewhere used in the bible, and therefore in this place greatly to be weighed; it hath two signifi-

significations, which joined together, make up the whole work of the heart.

The first is *fervere, ebullire, præparare cibos*; the other is *cum impetu protrudere, longè eructare sive pulsare*; the heart gives heat, and motion, and life, unto that which is to be our nourishment; and after that it doth with a certain force and vehemency cast it forth, and pulse it to all, even the extremest parts, that are thereby to be enlivened. And this in the letter not having been understood by interpreters, makes them come far short also in the mystery; which is, that the doctrine of the kingdom of Christ (for that is the good thing that his heart is here inditing) having not as yet had its full measure of strength and life in the world, and that which it formerly had, by reason of the revolution of time, and circulation of ages, being much weakened and enfeebled, is now again in *David's* heart, by the spirit of the living God, impregnated with new vigour, and thence-from with great earnestness pulsed forth to the generations to come, even to the end, to sustain and support them, and to quicken them all to their duty, and to a longing expectation of the glorious kingdom of their Lord. But to return to the heart with the blood: We must farther know for the explication of these symptoms, that there are within the body of the heart, two firmly distinct cavities, a right and a left, usually called

ed *ventricles*: from which there arise, and unto which there are annexed, certain peculiar vessels conducing to the ends hereafter specified. Out of the right ventricle of the heart, proceeds the great vein called *vena cava*, which sends forth branches throughout the whole body, and hath at its entrance into the heart, certain portals, from their form called *valvulae tricuspidæ*; and also that artery, anciently called *vena arteriosa*; inserted into the lungs, unto whose original are annexed the portals resembling the *Greek sigma*, and and therefore called *valvulae sigmoideæ*. Out of the left ventricle proceeds that vein anciently called *arteria venosa*, inserted in like manner into the lungs; and also the great artery, called *arteria aorta*, which dispenseth its branches throughout the whole body; both whose cavities are defended with the like portals with the former. It remains only that we shew how the blood and life is actuated in these parts, and how it passeth in, and thro' them, and in and through the whole habit of the body; which is by way of rotation, or running the round, going out from the fountain, and returning thither again, *The sun ariseth, and the sun goeth down and hasteth to the place where he arose; the wind goeth toward the south, and turneth about unto the north, it whirlleth about continually, and the wind returneth again according to its circuits; all the rivers*

vers run into the sea, yet the sea is not full; unto the place from whence the rivers come, thither they return again, Ecclef. i. 5, 6, 7. Thus it pleaseth the king to express the circulations of the greater world; those of the lesser are no less remarkable. The blood, wherein is the life of man, passeth about the body continually, and returns according to its circuits; the streams thereof run into the fountain, which is never full; unto the place from whence they come, thither they return again; which is by the instruments before mentioned thus performed. The *vena cava* containing much blood in its cavity, near the *basis* of the heart, on the right-side, doth gently pass it into the right ventricle of the heart, which is dilated in its *diastole*, for its reception; and immediately thereupon contracting itself in its *systole* (the three pointed portals hindering the passage back again into the *cava*) it must necessarily thrust the blood through the open passage of the *vena arteriosa* (where the sigmoidal portals hindering its return) it must pass through the strainer of the lungs, and so be received into the branches of the *arteria venosa*, and thereby brought into the left ventricle of the heart, where again it is with violence pulled forth into the *aorta* (the portals here as before always hindering its regress), by the branches of which artery it is carried to all the parts of the body to enliven them; which work be-

ing done, what remains is received into the capillaries of the veins in the several parts, whence it passeth of its own accord naturally towards its center, from the lesser into the greater branches of the veins, and consequently at last into the great trunk of the *cava*; from whence it is recommitted into the right ventricle of the heart, to be chased the foil. This is the true doctrine of the excellency and motion of the blood, and of the use of the heart, and the parts appertaining thereunto; all which were perfectly known to *Solomon*, as will abundantly appear anon, in the explication of the symptoms we are now about. Yet it pleased the Lord that this knowledge should, with the possessor of it, sink into dust and darkness; where it lay buried for the space of 2500 years at the least, till it was retrieved thence from by the wisdom and industry of that incomparable, and for ever to be renowned *Dr. William Harvey*, the greatest honour of our nation, and of all societies of which he was a member; who stands, and ever will do, with the highest note of honour in the calenders both of physicians and philosophers; and it were but justice to put him with the same eminence into that of the church, since he hath contributed more to the understanding of this, and many other places of scripture, than all that ever undertook that charge.

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These things being thoroughly weighed, and well understood, the two symptoms which remain to be spoken to, do open themselves into the same doctrine without any more ado. By the *pitcher* therefore we must understand the true and proper conceptacle of the blood, namely, the *veins*, which throughout the whole body serve only as a vessel, to contain that noble liquor, and carry it back again to the fountain. The original word כֵּיכָר signifieth sometimes more generally any containing vessel, and so is taken for the widow's barrel in which was the meal, 1 *Kings* xvii. 14. but more especially that which is called a *pitcher*, *Gen.* xxiv. 16. *Judges* vii. 1. and so more frequently it is used. This word both the *Greeks* and the *Latins* take unto themselves, only varying the termination as is most proper to each language, and that in the very same signification. Now the proper containing vessel for the blood is the *veins*; there the blood is, as I may say, at home, in its own place; while it is in the heart, it is preparing enlivening, and enobling; while it is in the lungs, and all the other parenchymous parts of the bowels, it is depurating and cleansing; while it is in the arteries, it is by force journeying; while it is in the porosities of the fleshy parts, it is communicating of life, and nourishing; but while it is in the *veins*, it hath no force upon it at all, nor is it doing

ing any thing of general use to the body, only consulting its own good, and tending in its own natural course to its proper center; as milk is in the breasts, and marrow in the bones, so is blood in the veins; and therefore these are the *pitcher* here intended. This pitcher also hath its ear, which is usually called *auricula cordis*; which (notwithstanding its name, is, as if it most properly appertained to the heart) yet we must know doth rather belong to the vein, and is indeed a part thereof, and not only a part, but the principal and primary part thereof, from whence all other parts and branches do arise, as from their original, and whereunto all the blood of the body, by the compressive motion of the veins, doth naturally tend, as to its ultimate hold, and whence from it will in no wise depart but by force; and therefore this head-spring of the veins, being dilated by the continual afflux of blood, is necessitated to ease itself by contraction, and so conveniently forceth out a due proportion of blood into the fountain whereunto it is annexed.

Now the *fountain* can be no other than the right ventricle of the heart; for this is yet more strictly the fountain of life, and forge of the vital spirits, and it doth sensibly live before, and die after the other parts, even of the heart itself; moreover here it is, that the matter of our nourishment receiveth its first
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enlivening ; for our food being received from the stomach and guts into the common passage of chyle, is thence-from carried directly into the subclavial branch of the *vena cava*, where being mixed with blood, it yet remains lifeless and heartless, till being carried along that vein it is at last brought into the right ventricle of the heart ; wherein the heat, motion, and ferment, set the active principles thereof at perfect freedom, and so instantly endow it with plenty both of life and spirit. Thus richly fraught, doth the blood pass out of its fountain, and by the ways before described it is brought to all the parts of the body, where parting with much of its lading for their sustentation, and being refrigerated by the coldness of the extremities, and the ambient air, it would soon be coagulated, and altogether barren, did it not return again to the right ventricle of the heart, as unto its fountain, to recover its former perfection. This part, therefore, that doth at the first give life to that which enliveneth the whole man, and doth, as often as it returns thither, impregnate it anew with the same, must needs be the fountain here intended. And to this the original word gives an extraordinary clearness ; implying, not only the *signum*, but the *signatum* ; not the hieroglyphick only, but the part thereby deciphered : signifying in the first place, *fons*, a fountain ; and secondarily,

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fonturigo venarum, the spring or original from whence the veins arise: and this is so clear, that it made ancient commentators interpret the fountain here unto the liver: Now, had they been right in their natural knowledge; that is, had they known that the veins do not arise from the liver, as from their first original, but from the right ventricle of the heart, (as all knowing men now confess they do); they had without all doubt, by the guidance of this most significant word, pitched upon the true meaning of the place.

These vessels being thoroughly understood, we must farther know, that so long as man remains in perfect health and strength, they are unceasingly and carefully performing all those offices unto which they are appointed; but this natural course doth not continue for ever, for this pitcher is but an earthen vessel, and doth not so often go to the fountain, but at last it comes broken home. This breaking of the pitcher here (which is the symptom of old age just upon the point of death) is the failing of the veins, their ceasing from their natural action and use, when they can no longer carry back, nor conveniently pass into the heart that liquor, which they properly contain. That little blood that remains in the cold body of man near his end is soon coagulated; and, stagnating in the veins, the motion and circulation thereof is hindered;

dered; and so it becomes thick, like unto the pith of elder: and because it cannot return to the fountain, for a redintegration of its life and spirit, it dieth in the veins; and so all the extreme parts of the body become spiritless and cold; which is the symptom here intended. *Frigiditas extremorum* is acknowledged by all that have considered that subject, as one of the most certain signs of approaching death. And our great master of prognosticks, in that compleat and yet compendious book of his aphorisms, doth once and again, not out of forgetfulness, but out of earnestness, that it may more especially be taken notice of, give us that famous maxim, ψύξις, ἀνωμαλίων, θανάσιμον.

The wheel broken at the cistern.

The symptom last spoken of had reference to the instruments of the vital faculty, which serve for importation, and reception of the blood and spirits; this that we are now speaking to hath reference to those, which serve for exportation and rejection of the same.

The blood (as was before observed) naturally, of its own accord, tends in the veins, unto the heart; but it returns not from the heart, into the parts of the body, but by force: Thus all the rivers in the land naturally ebb into the sea; but they flow not thence-
from,

from, any farther than the violence and impulse of the sea extends. The blood, being once forced from the heart, is presently received into the trunk of the great artery, called the *aorta*; and by the branches thereof is carried to all the parts of the body. This therefore being the chief and principal instrument of rotation, or circulation of the blood, is most aptly intimated unto us by a wheel: For what is a wheel, but an instrument of circulation? And what can a wheel be an hieroglyphick of, but of something that goes, or makes the round? And this is so obvious to every one, that all who have ever commented upon this place, have been still hammering at some such thing. Some therefore have interpreted this place to the life of man, which passeth as in a ring, according to that saying, *κοινὰ πάθη πάντων, ὁ βίος τροχός*. Others have interpreted it to the death of man, when his compounding parts shall revert into the first beings.

*Cedit enim retro, de terra quod fuit ante,
In terram, &c.*

And so they make this expression explained at large in the following verse; *The dust shall return to the earth as it was, and the spirit shall return to God that gave it*. Others interpret it to the reciprocal communications between the heart and the head; the heart continually send-

sending to the head, blood and vital spirits; and the head again returning them to the heart, sublimed instruments of animality.

Lastly, There are that ingeniously interpret it to respiration, which is performed by a circular motion; inspiration, and expiration continually succeeding one another in their courses. All these archers have shot exceeding well, and have hit the *but*, (while many others have shot at rovers); yet these, not being able to discern the *white*, have not touched that principal mark. I mean, the grand circulation in man's body, not being known to these ancient commentators, they have done the best that could be in the second place. What this grand circulation is, and how performed, hath been already described; and those vessels that are inward bound, which bring home the noble traveller, the encompasser of the little world, were described in the explanation of the foregoing symbol; but those which are outward bound, which carry him forth with all his wealth and substance to accomplish his intended end, are here intimated unto us by the wheel. That the great artery, with all its branches throughout the whole body, is here principally pointed at, hath been already said; and may be farther confirmed, first, in that it answers so directly to the vein signified in the last symptom, by the pitcher. Secondly, In that it is to us the most apparent pulsor;

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we can feel the blood to be forced along its cavity, in the wrists, the temples, and divers other parts of the body. Lastly, In that it is so appositely placed at the cock of the cistern, as you shall hear hereafter. Yet we must not so limit this wheel to the arteries, as to exclude the very substance and parenchymous part of the heart itself: For upon whatsoever instruments the pulsifick faculty is exercising itself, they are all here intended, by the *wheel*; for they are they, and they only, that carry off the blood from the fountain, and force it from the centre of the body, to the circumference. Water may easily be conveyed in trunks or pipes, by its own natural tendency only, unto all those places that are beneath or level with the spring from whence it first comes; but if you would have it of a farther use, to serve those places that are higher than the spring, you must then fetch it up with violence, by a wheel, or some such instrument of force; as is to be seen in our water-houses, and all such ingenious inventions of publick good. Thus all the blood in man's body is, in certain pipes and trunks, by its own natural tendency only, brought home to the heart; but it will in no wise go farther, to be of a more general use to the whole body, till it have some instrument of force to compel it thence-from: The pulsifick faculty is the mover, and the instruments of pulsation

the wheel that performs this work, that is of so publick a concern to the whole.

The cistern from whence this wheel forceth that liquor which afterwards it conveyeth throughout all the parts, is the left ventricle of the heart; for hereunto it is, that the great artery is annexed, and from hence it doth arise. A cistern is a vessel made on purpose to receive a due proportion of water, and to contain it till the time of use, and then conveniently to pass it into those other vessels, that are appointed to receive it thencefrom. And thus the left ventricle of the heart doth, in its *diastole*, receive that blood that is brought unto it by the *arteria venosa* of the lungs; and having retained it a little, it doth, in its *systole*, conveniently pass a due proportion thereof into the *aorta*, to be dispensed as was spoken before; and this is the true and only use of the left ventricle. For the blood being enobled and enlivened in the right ventricle, and refrigerated, and cleansed from its fuliginous vapours in the lungs, it is now in all things accomplished for its ultimate use, and remains only to be sent into those several parts it is to quicken; which it cannot conveniently be, unless it be first received into this cistern, and afterwards, by the pulsifick faculty and instruments, be disposed of to that appointed end: And we cannot but here remind, those portals that are placed, both at
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the entrance into, and passage from, the vessel we are now speaking of; namely, the *valvula tricuspidis & sigmoidea*, which as the cocks to let in, and let out, do by their opening or shutting give convenient passage, or absolute stoppage, to that liquor which continually runs that way.

It cannot but by this time be acknowledged by all those that have gone along with us, and taken special notice of the aptness of these two expressions, viz. *The pitcher at the fountain, and the wheel at the cistern*, to symbolize unto us the circulation of the blood, and the use and action of the heart, and the parts belonging thereunto; that the doctrine which is now justly called *Harvæan*, was at first *Solomonian*. For as it pleased God in these latter days to give in this certain and most useful knowledge, to the industrious and indefatigable endeavours of the learned Dr. *Harvey*; so did he of old, give in the same, unto king *Solomon* in the lump, together with all other natural knowledge, as a superabundant answer to his fervent and effectual prayer: which great truth being confirmed by the powerful reasons and ocular demonstrations of the one, and by this divine testimony of the other, let it not be for the future in the least measure doubted or questioned; but let it be greatly prized, and so much the rather, because (while many others of great im-

importance, wherein these two worthies doubtless agreed, have perished by the way) this only from them both, hath escaped safe to our hands.

It remains now, that I only name unto you that symptom of old age, at the time of death, that is here signified unto us, by the wheel broken at the cistern; which cannot but be understood, to be the ceasing of the pulse: the instruments of pulsation decay, and can no longer perform that work, which must necessarily be continued for the preservation of life: *It came to pass when the Lord had a purpose immediately to destroy the host of the Egyptians, that he looked upon them, and troubled them, and took off their chariot wheels, that they drave heavily, Exod. xiv. 24, 25.* Whensoever it is the good pleasure of God to give that word of command, that the tabernacles of our bodies, should be as they were; his purpose is easily discerned before-hand by his looking upon us, and troubling us, and giving disturbance unto, and taking off, those chariot wheels, upon which our life is turned; but yet this is far more apparent in the time of age, for then the chariot wheels are more sensibly hindered and removed, and so taken off by degrees. The old man's pulse doth yearly and daily decline, both in respect of the mover, the stroke and the interval; so that it must needs beat more languidly, slower, and

seldomer than it did before. The faculty grows weaker, the use is not so urgent, nor the instruments so vigorous, in age; wherefore all the causes of a quick and a lively pulse failing, the sad effect thereof must undoubtedly follow: nor will it ever cease declining, till it ceaseth beating, and then the man immediately ceaseth living; *pulsus rarus, tardus, languidus, & nonnunquam intermittens*, is the true pulse of the old man, all the while he is in that condition, and is like unto the tolling of a passing-bell, which may put him and all his friends in mind, that he is shortly going the way of all flesh; but *pulsus omnino abolitus sive asphyxia*, (which is the symptom here mentioned) is the condition of the dying man, and is like the stinting of the passing-bell, or rather the ringing out of the knell, which gives notice unto all that he is gone, and may serve as a loud and distinct invitation to the funeral.

And thus I have as plainly, and as briefly as I could, run over all these mystical symptoms; both those that attend a man all the time of his declining age, and those that more immediately forerun, and foretel his last change. And now I judge it time for me to desist: when all the sense and motion, both in the rivulets and fountain is quite taken away, when there is death in the face, when there is a coldness in the extremities, and an utter abolition of the pulse,

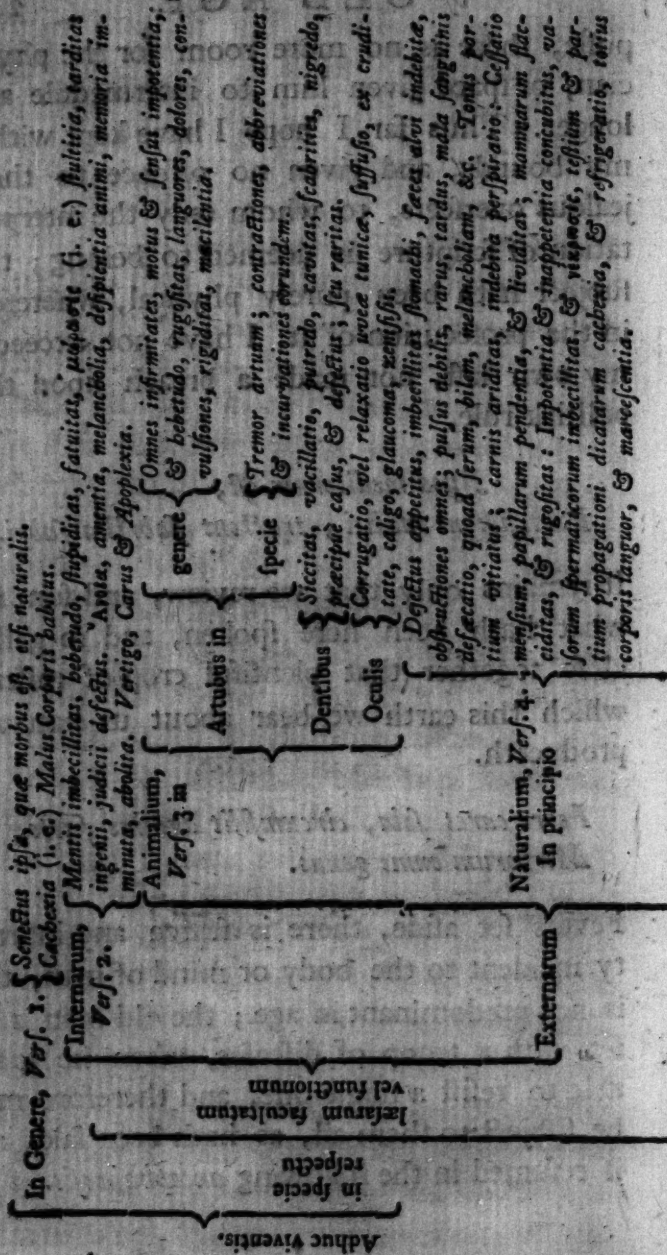
pulse, there is no more room for the physician, or space given him to intermeddle any longer. Thus far I hope I have kept within my bounds, and given no offence to those jealous overseers, to whom only the interpretation of scripture is deemed to belong; this subject hath been purely physical, wherefore in the prosecution of it, I have not exceeded my own last, nor made a breach upon that politick rule,

*Quod medicorum est,
Pertrahent medici; traent fabrilis fabri.*

It remains only that we review, and sum up, what hath been here spoken, and so gather close together that plentiful crop of miseries which this earth we bear about us naturally produceth.

*Febris caret sola, circumfilit agmine facto,
Morborum omne genus.*

Fevers set aside, there is scarce any infirmity incident to the body or mind of man, that is not predominant in age; the old man is beset with a troop of diseases, when he is not able to resist a single one, and therefore must be subject to them all, as hath been said, and is resumed in the following *ancephalæosis*.



tomata tens

Occlusio laborum contra cibum, obseratio pharyngis, utriusque

Occlusio laborum contra cibum, obseratio pharyngis, utriusque
affecti ventriculi, deplendi difficultas, impotentia referendi in
cunibus arteriarum & venarum, imo omnium interarum partium,
quas & valvulis; pororum restrictio, dysuria, stranguria,
isphuria, alvi adstrictio, seu pigra, tardaque naturalis depositio.
Anxietates animi, inquietudines nocturnæ dolores corporis, præcipue
capitis.

Encephalæ seu spirandi difficultas, diffillationes tussim inferentes,
æstus, aiaed'ia, seu vocis abolitio, diminutio aut depravatio;
exsecatio asperæ arteriæ, induratio Cartilaginum laryngis, sordet
aurium præcipue borycoia, seu grævis audius & surditas.

Minor
Major

Excrementitias. Cavities.

Duras. Partium ductilium induratio & incrustatio, & fragilium exten-
sionis & prominentia.

Molles. Fluidarum partium depravatio & minoratio, & mollium aridi-
tas & consumpcio.

Extra Cranium. Paralysis particularis & universalis.

Intra Cranium. Omnium sensuum subita abolitio eum facie Hippo-
cratica.

Impotentia. Frigiditas extremorum.

Exigentia. Pulsus abolitus.

Mixtarum, N. 4.
In fine

Animi, timor
Excrementitias

Alimentitias
Cæque vel

quoad partes
Cæque vel

Animalis
Vitalis

Tam morientis Vers. 6. Quoad influ-
menta facultatis

Simplicium affectuum;
sive
Qualitatum mutata-
rum, Vers. 5.

I have here set down this recapitulation, that what is in these six verses delivered, may be compared with any, or all those systems of the diseases of age, which have been given us by *Hippocrates*, *Galen*, or any of their followers; by *David de Pomis* the Jew, *Franc. Fogerolæus*, or *Franc. Ranchinus*, or any other heathen or christian, that have antiently or modernly treated of this subject; and let preference be given to the most worthy. I would fain have the crown to be put upon the head of the king, his wisdom only, among all the rest, being pure and from above: which that it may be, I would in no wise have the comment delivered by us, but the text delivered by *Solomon*, to enter the list of compare. The pen-man of the allegory, without all doubt, thoroughly understood the subject, and fully declared it, in these ænigmatical phrases: the interpreter, like his fore-fathers, may come very far short of understanding the whole truth, and possibly may in some places miss it; *In many things we offend all*. I know not that man, though placed in never so eminent a chair, who can, in the interpretation of scriptures of much higher concernment than this, give an infallible judgment, or pass things from under his hand so sound and perfect, which a more knowing, and a better enlightened generation, may not find just cause to correct. If what I have said, may serve only
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to tell men, that there is a treasure hid in this field, and withal to shew of what nature, and what value it is, and which way the veins of it do secretly pass under ground, I shall have my full end thereby. For howsoever I may, in my own search, in digging and delving after it, mix earth, and dirt, and rubbish, with silver, and gold, and precious stones; yet it will, without all doubt, give occasion to all those, who love and long after the acquisition of such treasures as these, to come to the place where they are to be had. The word of God doth upon many subjects of natural things, though but briefly and incidentally mentioned, give a clearer and more sure light, than all the voluminous writings of the whole shoal of heathenish philosophers. *He that planted the ear shall he not hear, and he that made the eye, shall he not see?* Psal. xciv. 9. *He knows our frame,* Psal. ciii. 14. and the frame of all things that he hath made; and therefore whatsoever he saith concerning any of them ought most diligently to be hearkened unto, as to the best and truest word that was ever spoken about them. This great truth, I know many learned men are not aware of, and none but those that do ἐρευνᾶν, search the scriptures, and dig in them, as for hid treasure, can ever understand. The labour that I have taken upon these six verses,

I am so far confident of, as that it hath made this truth appear upon the subject we are now treating of, as I have already done upon some others, especially that, *de formatione fœtus in utero materno*. And following the commendable intentions of *Levinus Lemnius*, *Vallesius*, *Rueus*, and other learned men; and the pious exhortation of the honourable Mr. *Boyle* * thereupon, if God give me life and opportunity, I may yet further cultivate the same theme. My design is plainly to persuade men to be in love with the scripture; that as some looking after eternal life have therein by the way found out many natural things; so others, looking after natural things only, may yet far more happily find eternal life: like *Zacheus* gazing after the novelties of the world, and yet being in the way where *Christ* passed by, they may hear that joyful voice of salvation being brought to their House; *nescio quo modo sacrorum librorum lectio, etiam historica aut physica, animum pietate imbuunt latentur* †. This eternal concern is the principal drift of these holy writings of God, yet they are every where besprinkled with abundance of other truths of less concernment, which will give great delight and satisfaction to the diligent enquirer: For they are as the garden of God, *Wherein groweth every tree that is pleasant to the sight, and good for food*,

* Natural Philosophy, p 31.

† *Vallesius sac. Phylsoph. in præmio.*

food, the tree of life also in the midst of the garden, Gen. ii. 2. I must confess with others, that there are many natural things herein contained, that are inconsistent and contrary to what we have learned in the schools; but that matters not; let us be sure to make God wise, and him true; though every man a fool, and a liar. There are also some things which will startle and amaze the best human reason; nay, that which is much farther, some things that our senses will hardly give consent unto; yet in all these difficult cases, I have had a ready solution (which although it will not untie all those intricate knots I meet with, yet it will loose them, which is full as satisfactory) and that is, that grace and gift of God which is ἐλπιζομένων ὑπόσκις, & πραγμάτων ἑλεγχος ἔβλεπομένων, Heb. xi. 1.

I have I hope by this time done a double good work; on the one hand I have vindicated our profession, from all those abominable and filthy scandals, that impudent and malevolent persons have been apt to cast upon it; as though the studies we addicted ourselves unto, did (like the sin of *Adam*) naturally make us run from God, and hide ourselves from him, and patch up some perishing remnants to cover our nakedness, after our own contrivances: whereas in truth there is nothing in all the world, that man can be busied about, that will sooner bring him to God, than the

earnest beholding him in the book of the creatures ; there is not the most contemptible being, which by virtue of the Almighty *fiat*, at first started out of nothing, that will not (if it be thoroughly searched and followed) at length bring us home to its eternal Father ; *As of him, and from him, and through him ; so to him also are all things, to whom be glory for ever*, Rom. xi. 36. But how much more shall we be instructed in this divine lesson, by intimately contemplating that heavenly work of works, the sum and height of the visible creation, that honourable piece, *tantum non angelical*, in which the creator himself, rested in time, delighted from eternity, being the true pattern of his own Divine Image ; *Man*. And God in his providence having so ordered, that the holy writings should begin with the history of the creation of all things, and lastly and chiefly of man ; doth plainly teach us this lesson, that none are so idoneous hearers, or so meet receivers of the words of his mouth, as those that have first well understood and abundantly admired the works of his hand. All which fall under our consideration, as the proper subject of our knowledge ; but chiefly the chiefest, which cannot but in the end bring us to him, who made and knows all things, as the saying of the woman did the Samaritans, *John iv. 39, 42.* and being hereby brought unto him, we afterwards hear him

ourselves, and believe now, for his own word sake; *That he is God, and the Father of our Lord Jesus Christ, the Saviour of the world.*

We are so far from slighting or contemning the scripture, that we are the great admirers of it, and do endeavour to advance it above all other writings whatsoever, and that even in natural things, though never so accidentally or cursorily handled; and we had rather that all our other books, though very curious, and greatly valuable, should be burnt; than that one line, nay one letter, one jot, or tittle of it should in any wise pass away.

And on the other hand, I hope I have persuaded and prevailed with all my own brethren, to be more wise for themselves, and more wary in respect of others, than some severe and jealous-headed censurers have judged them to be: that we may none of us give the least occasion for any one to speak evil of the things they understand not; but by taking heed to a sure rule, we may bring perpetual honour to our own faculty, and shame to the loose professors of a better. A light and superficial knowledge of natural things, may indeed consist with atheism, but a deep and a profound search into them, doth bring men back again to God, and necessarily bind them over to religion. *Solomon's wisdom* stayed not in the creatures, though he perfectly knew so great a variety; but did from them

them only (as it were) take its rise, and mount higher than the cedars, even into heaven itself, and there only could find its rest, from whence it had its first beginning; like the spirit of man, *returning to God that gave it.* Let no man think he hath sufficient knowledge in natural things, who hath not by them been directed to divine; or that he hath viewed the creatures enough, who hath not been led through them to the Creator. Nor shall ever any one have my consent to pass for a philosopher, who keeps himself so ignorant of the scripture, as with devotion to admire that academical inscription, ἀγνῶς-ω Θεῶν, Acts xvii.

23. Knowledge natural and spiritual are not so contrary one to another, but that they may very well agree together, and cohabit in the same mansion: nay, they are greatly conducive to the growth and promotion of each other. None can be a better evangelist than the beloved physician; and none so complete a physician, as he who is frequently conversant in the word of God; and able to evangelize: For that is the fountain that sends forth plentifully of both these waters, and *is alone able to make a man perfect, thoroughly furnished to every good work.*

Now in the last place, I must acknowledge, upon the review of what is here written, that there are many things herein (I myself being judge) which might have been delivered after
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another manner, much more consonant to those plausible and probable doctrines which are the products of the industry and ingenuity of this inquisitive age. It is far more easy to be sceptical, and to overthrow the positive assertions of others, than to produce anew those which will prove more firm and lasting, or to instaurate better in their room. But I question not but the good intention hereof will, among all honest and candid persons, in some measure compensate for all those miscarriages; especially since by this leading attempt, in a way so obscure and difficult, and withal so untrodden, men of the greatest parts and abilities will be induced for the future to step into, and to become painful labourers in the vineyard of God.

- Which will be a most acceptable work to the whole christian world, and most honourable to themselves; for as *Hiram* was eminent in *Tyre*, for his wisdom, understanding, and cunning in all manner of workmanship, 1 *Kings* vii. 14. yet that which crowned all his excellencies, and renowned him to this very day, was, that he came to the adorning of the temple of God at *Jerusalem*. Those learned men who exercise themselves in natural philosophy alone, produce only news-books for the present generation, and so a little time doth consume all together: Whereas the labour that is taken in the word of God, is of a far more durable nature, and is like to run parallel with everlasting truth. But

But yet more particularly, I cannot but call for help upon this individual subject: It is my earnest desire that physicians would study the gerocomical part of physick more than they do. And indeed no part wants our help so much as this; for among all the verborious *Gracians* there is not one compleat tract upon this subject only: And there are but very few to be found among all other writers, and those so miserable and barren, that the readers are left exceedingly in the dark, and can scarcely be resolved in the first question belonging thereunto, namely to what part of physick it most properly appertains. That one aphorism of *Hippocrates* * which a man might easily prove (would it not give occasion to some foul-mouthed libellers farther to detract from the reverence due to antiquity) is not *totum teres atque rotundum*, perfect and compleat in all things; hath scarce been out-done for these 2000 succeeding years.

Now, as this part of physick needs it most, so I am as bold to say, it is as capable of improvement as any other part whatsoever; and the improvement that may be made thereof would be as useful to mankind as any one discovery of nature, that hath at any time hitherto been made. Let none give over their patients when they come to be burdened with the infirmities of age, as though they

were humble nature, and is like to run
 * *Lib. 3. Aph. 11.*

were altogether incapable of having any good done unto them; for, as this will argue great weakness and ignorance in the physician, so it is exceeding cruelty to the patient; for, as *the slothful in his work is brother to a great waster*; so those that are negligent toward their ancient friends, are very near of kin to those inhuman *barbarians* and *Americans*, who with great pomp and alacrity, both kill and devour them; thinking thereby they perform a most charitable office, in delivering them from those incurable maladies, which will for ever render them miserable: But sure an industrious artist may find out ways to be charitable at a more merciful rate. The methods which are already known to some more quick-sighted herein than their fellows, do abundantly teach us, that altho' a perfect cure is not to be proposed or hoped for; yet a conservative cure in respect of age, and a complete cure in respect of some of the diseases before mentioned, and a palliative in respect of most of them, may easily be effected. A convenient diet, and meet application of proper medicines (supposed always, the blessing of God thereupon) cannot but preserve old men, and hinder and keep off those miseries which otherwise would sooner creep upon them, and give much ease, and very considerable rebukes, to the violent assaults of all those that have already taken possession: but those things which are already known by the most know-

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ing men in the world, are little or nothing, in comparison of those that remain yet to be known upon this subject. The high and supreme matters thereof being yet unattempted by any, cannot but stir up more sedulous and active physicians to be aiming at least at the attaining them; wherein if they shall not possibly accomplish to their full satisfaction their intended purpose, yet surely they will much out-do all those who content themselves with projects of a lower sphere.

— *Who aimeth at the skies,*

*Shoots higher much than he that means a tree *.*

The reasons why persons in this age fall so soon into this decrepit state, and why the miseries thereof are so multiplied and magnified upon them, is, because either they call not in soon enough for help, or because those that are called in either understand not, or mind not, what they ought to do. An honest and an able physician may surely approve himself to his ancient patient (as *Ruth's* son was to his grandmother) *a restorer of life, and nourisher of old age*, *Ruth* iv. 15. Much, without all question, may be done by human knowledge, for the retarding and keeping off old age for a competent season; and for the quitting and clearing of it, from that multitude of grievances that do so easily beset it: Though the

* *Herbert Perirbanterium,*

completion of this work be reserved in God's own hand, until he shall bring that happy state upon his people, which was typified by *Moses*, who, *when he was one hundred and twenty years old, had not his eye dim, nor his natural force abated*, Deut. xxxiv. 7. And was plainly prophesied by *Isaiah*, saying, *There shall be no more thence an infant of days, nor an old man that hath not filled his days, for the child shall die an hundred years old*, Isa. lxxv. 20.

And yet farther, it seems not to me in the least incongruous to christian religion to affirm, that life itself may be prolonged. There are certain ways and methods that have a natural tendency in them either to life or death: *As righteousness tendeth unto life, so he that pursueth evil, pursueth it to his own death*, Prov. xi. 19. Abbreviation and prolongation of life stand upon the same foundation, and the self-same arguments either confirm them, or overthrow them both together. Now most certain it is, that *evil men shall not live out their days*, Psal. lv. 23; and as certain it seems to me, that good men shall out-live their days; else what means that promise of additional life, *My son, forget not my law, but let thine heart keep my commandments, for length of days, and long life, and peace shall they add unto thee*, Prov. iii. 2. Yet the words of *Job* are everlastingly true, *The days of man are determined, the number of his months are with God, he hath appointed his bounds that he can-*
not

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not pass, Job xiv. 5; his prescience and predetermination do not at all hinder the influences of natural causes, but he knows and disposeth of them also, equally with their effects. And thus those things, that are with us reputed the most contingent, are also fore-seen and fore-ordered, as well as others. The drawing of a bow of a certain man at a venture, was as well known and determined, as the death of that king that fell thereby, 1 *Kings* xxii. 34. The whole story of *Hezekiah's* life and death was alike predestinated, *Isa.* xxxviii; yet he was sick unto death, and had then certainly died, had not God lengthned out his life yet fifteen years, and had he not followed his appointment in making use of the plaster of figs. *Paul's* most comfortable words in his dangerous voyage to *Rome*, *There shall be no loss of any man's life among you*, *Acts* xxvii. 22. was a true report of the sure unchangeable and eternal counsel of God: Yet had not the shipmen abode in the ship, they could not have been saved, *Acts* xxvii. 31. The death and continuation of life of every man, and of every individual living creature is certainly determined; yet they shall both of them as necessarily follow their constituted means, as day and night, do the presence or absence of the sun.

But yet, once more, it is more than probable, that such noble medicines may be found out and prescribed, that may innovate the
 strength

strength of all the parts of old men, and bring their temperament back again to equality; that may so fortify nature, and consume or expel whatsoever is contrary thereunto; as life and vigour may be restored to such a measure, which may safely be called, the renewing of youth. It is said of captain *Naaman* the leper, after he had made use of the ordinance of God for his recovery, that *his flesh came again like the flesh of a little child, and he was clean*, 2 Kings v. 17. And thus through the blessing of God upon our weak endeavours, we daily see brought again from the grave's mouth, and restored to perfect health and strength, many that were *confecti morbo*, spent and consumed with a disease; and why some that are *confecti senio*, wasted with age, may not in like manner be renewed, seems not at all impossible. Nay, this *Elihu*, one of *Job's* friends, doth abundantly prove, from the power and providence of God, when he saith; *His flesh shall be fresher than a child's, he shall return to the days of his youth*, Job. xxxiii. 25. And those critical returns of nature, (which are vulgarly called lightnings before death) that do usually continue but for two or three hours, or days at the most, are notwithstanding sometimes, by the strength of nature only, lengthned out to so many weeks or months; and there can no reason be given, why a skilful and successful artist may not be made instrumental for the farther prolonging them, with greater comfort,

comfort, to so many years or *lustras*. The whole creation now grown old expecteth and waiteth for a certain rejuvenescency, with which ere long it shall surely be blessed, *Rom. viii. 19, 20*: In the mean time, this is presented unto us in a figure, in those several transformations and renovations of the ant, and silk-worm, and many such insectiles, which are soon brought to extream old age by their incessant labour; in recompence whereof, by a wonderful *metamorphosis*, they are renewed into brisk and lively flies. And there are abundance of more perfect creatures also, which depositing their old skins, or shells, or some such emblem of their age, are at certain seasons brought back again to a youthful state, and such are snakes, lizards, crabs, crevisses, eagles, king-fishers, and such like; and why some such thing as this, or at least something analogous hereunto, may not be wrought upon man, the most perfect creature of all the earth, I am sure no one can give an account. *David* in his doxology intimates, that there may, saying, concerning God in his providences, *He satisfieth thy mouth with good things, so that thy youth is renewed like the eagles*, *Psal. ciii. 5*. Yet were not these things thus visibly demonstrated to us, God might in his *πολύποινα* *σοφία*, *Eph. iii. 1*. alter the course where-in hitherto he hath manifested himself, and in some things he hath given us assurance that he

he will ; the way that hitherto he hath been pleased to take to bring our bodies to glory and immortality, hath been through misery, dust, and darkness, but in the last day he will take a nearer course to do the same thing ; *Behold, I shew you a mystery, we shall not all sleep, but shall all be changed, in a moment, in the twinkling of an eye at the last trump, for the trumpet shall sound, and the dead shall be raised incorruptible, and we shall be changed, 1 Cor. xv. 51, 52.*

These *magnalia naturæ*, (*viz.* the preventing, alleviating, and curing (as far as is attainable) the diseases before mentioned, the retarding of age, the prolonging of life, the renewing of youth) that have scarce entred the thoughts of vulgar pretenders to physick ; have been as unto the practic part under our consideration, with like care and industry, as what you here see in the theory ; and that from principles gathered up, not only from reason, reading, and experience ; but from some eminent instructive expressions of holy writ, which are not obvious to every cursory and superficial reader : all which may also be communicated to you in a convenient season.



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